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The Resources Agency
Department of Water Resources

BULLETIN No. 181-69

WATERMASTER SERVICE
IN THE
UPPER LOS ANGELES RIVER AREA
LOS ANGELES COUNTY

FOR PERIOD
OCTOBER 1, 1968 THROUGH SEPTEMBER 30, 1969

MARCH 1970

NORMAN B. LIVERMORE, JR.
Secretary for Resources
The Resources Agency

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

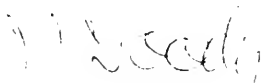
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FOREWORD

The Upper Los Angeles River Area is the latest ground water basin to come under the Department of Water Resources supervision as a watermaster service area. We welcome this opportunity to assist the Court and those parties affected by this ground water basin adjudication. The Department, as Watermaster, will strive to administer the Judgment in the most prudent, equitable, and economical manner.

The Watermaster has prepared this annual report for the parties to the Upper Los Angeles River Area Judgment and the Superior Court of Los Angeles County to present a comprehensive review of the water conditions in the Upper Los Angeles River Area during the 1968-69 water year. Authorization for this report is contained in Paragraph 2, Section X of the Judgment rendered by the Superior Court of Los Angeles County in the action: "City of Los Angeles, Plaintiff vs. City of San Fernando, et al., Defendants, No. 650079".

This report contains information on water supply, water use and disposal, water levels, transfers of water rights, compliance with or violation of the Judgment, and administrative costs. This report also contains the tentative budget of the Watermaster for the 1970-71 water year.



James J. Doody
District Engineer
Southern District
and Watermaster
R.E. CE 6500

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State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

Ronald Reagan, Governor
Norman B. Livermore, Jr., Secretary for Resources
William R. Gianelli, Director, Department of Water Resources
John R. Teerink, Deputy Director

SOUTHERN DISTRICT

James J. Doody District Engineer and Watermaster
Mitchell L. Gould Chief, Operations Branch and Deputy
Watermaster

Watermaster service in this area was conducted
and report prepared under the direction

of

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by

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assisted by

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*Stanley F. Hamilton was Deputy Watermaster through July 7, 1969.

ABSTRACT

The Upper Los Angeles River Area is the fourth ground water basin which has come under the Department of Water Resources' supervision as a watermaster service area./ The Upper Los Angeles River Area contains a total of 329,000 acres, comprising 123,000 acres of valley fill area (ground water basin) and 206,000 acres of hill and mountain area located primarily in the northwest section of Los Angeles County, with a small portion being in the County of Ventura./ Watermaster service, provided by the Department, helps to protect and guarantee continued use of ground water by the parties of the area consistent with the provisions of the Judgment under which the Watermaster was appointed./ The Watermaster has prepared this report for the Superior Court of Los Angeles County and the parties to the Judgment. This report contains information on water supply, water use and disposal, water levels, transfers of water rights, compliance or violation of the Judgment, and administrative costs.

CHAPTER I. THE UPPER LOS ANGELES RIVER AREA

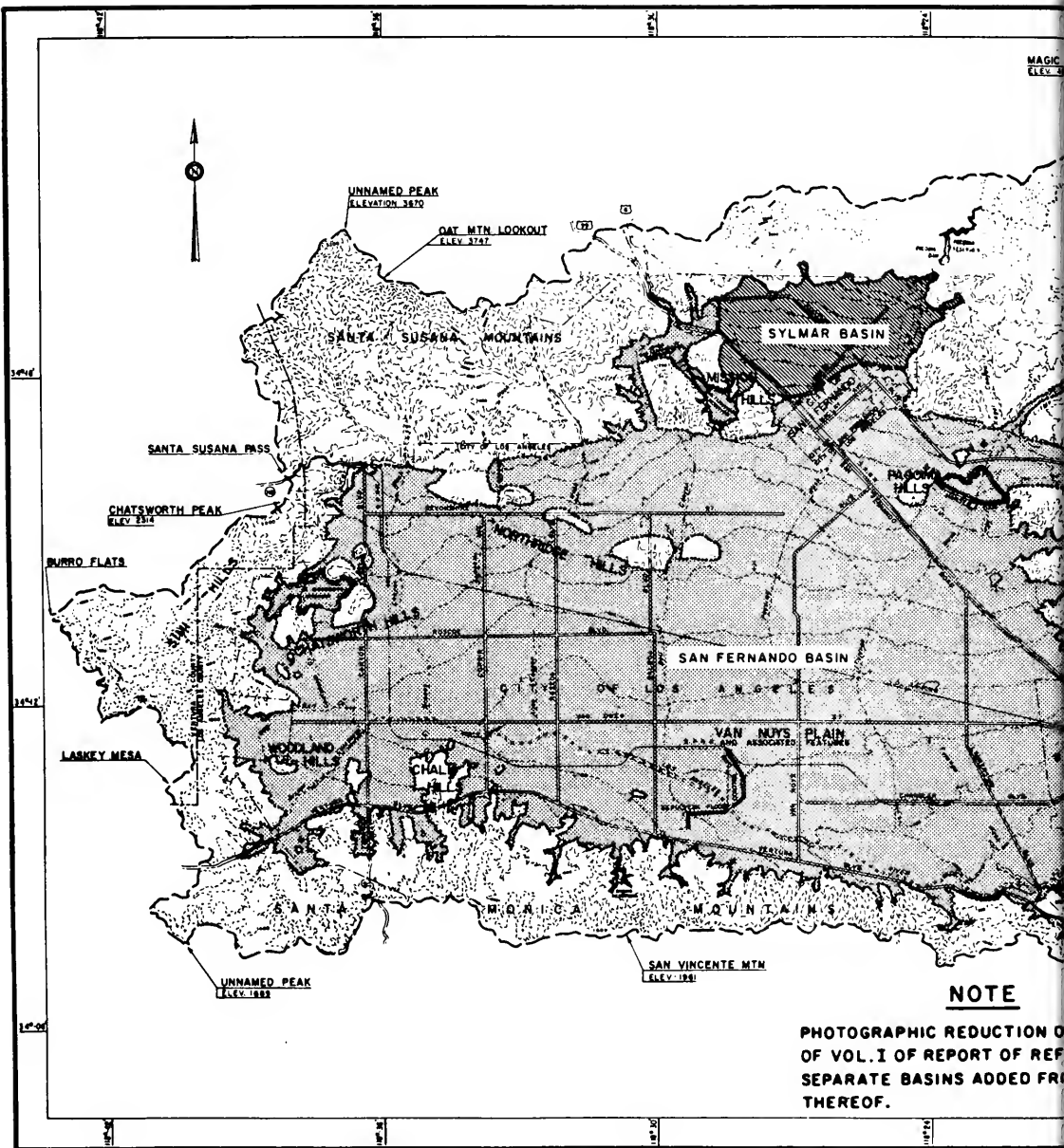
On March 14, 1968, the Honorable Edmund M. Moor, Judge of the Superior Court, signed the Upper Los Angeles River Area Judgment (City of Los Angeles vs. City of San Fernando, et al., No. 650,079). The Judgment, in essence, restricts all diversions or extractions of surface or subsurface waters from the Upper Los Angeles River Area, which is depicted on Plate 1. The restrictions were imposed upon approximately 214 parties of which 23 were active during 1968-69. The principal parties in the court action are the Cities of Los Angeles, Glendale, Burbank, San Fernando, and the Crescenta Valley County Water District.

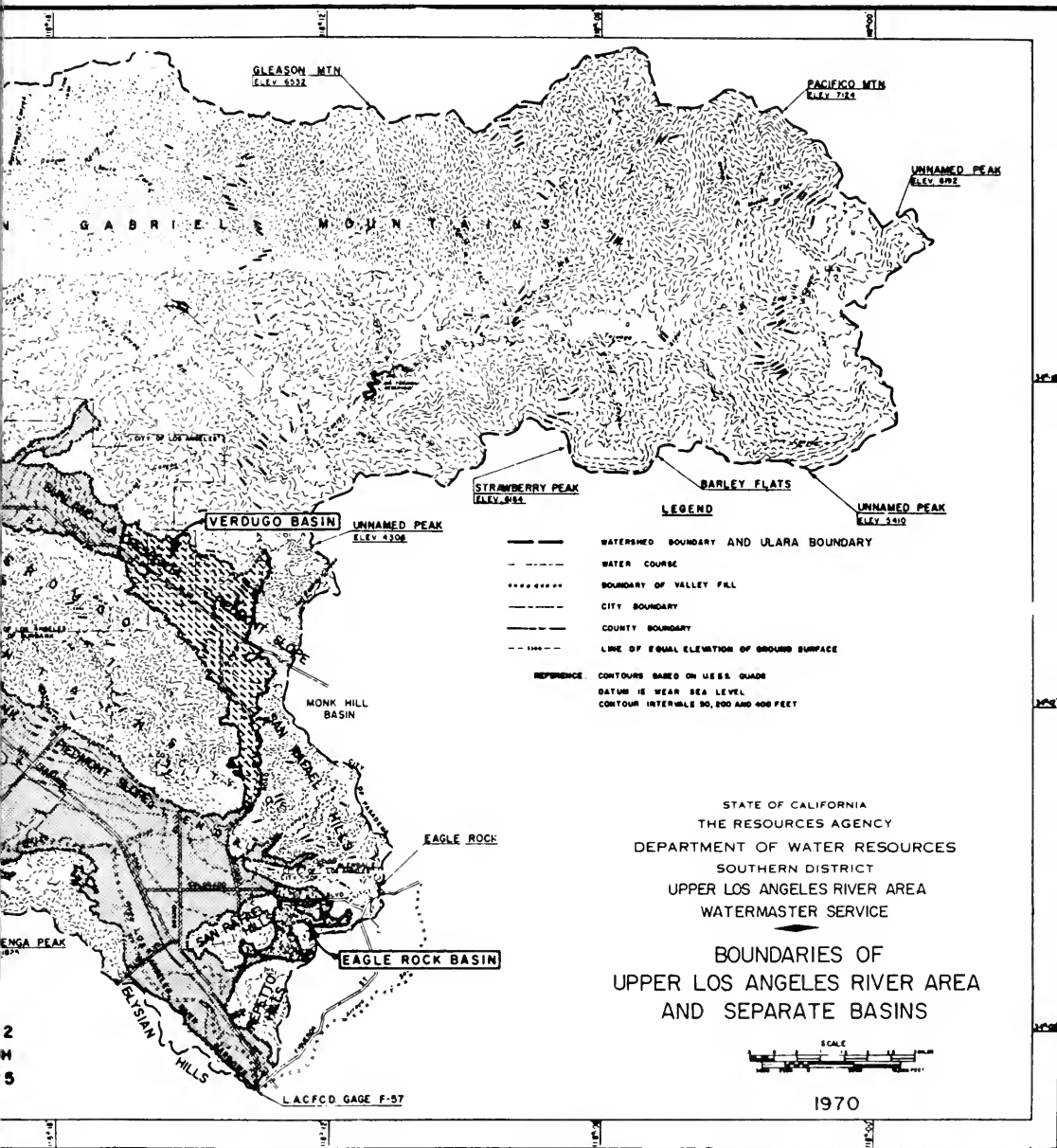
On March 19, 1958, an Interim Order of Reference was entered by the Court in Los Angeles Superior Court Case No. 650,079, above mentioned, directing the State Water Rights Board (now known as the Water Resources Control Board) to study the availability of all public and private records, documents, reports, and data relating to a proposed order of reference in the case. The Court subsequently entered an order on June 11, 1958, entitled "Order of Reference to State Water Rights Board to Investigate and Report Upon the Physical Facts (Section 2001, Water Code)". A final Report of Referee was approved on July 27, 1962 and filed with the Court. The Report of Referee made a complete study of the geology insofar as it affects the occurrence and movement of ground water and the surface and ground water hydrology of the area. In addition, the Board investigated the surface location of the beds and banks and of the channels of the Los Angeles River and its tributaries; the areas, limits, and directions of flow of all ground water within the area; the quality of the ground water basins; all sources of water, whether it be diverted, extracted, or imported, etc.

In essence, the report developed a basis whereby a Judgment could be rendered. The Report of Referee has been used extensively in the preparation of this first annual report of the Watermaster. The base maps and data in the Report of Reference will be utilized by the Watermaster in the presentation of this report.

Numerous pretrials were held, subsequent to the filing of the action by the City of Los Angeles in 1955. The trial, which commenced on March 1, 1966, was presided over by the Honorable Edmund M. Moor, Judge of the Superior Court, without jury. Evidence both oral and documentary was presented, after which the Court delivered and filed a Memorandum of Decision on October 30, 1967. Having submitted the Memorandum of Decision, additional arguments and evidence were presented, resulting in the Court's filing of a "Findings of Fact and Conclusions of Law" dated March 14, 1968. A Judgment (hereinafter referred to as ULARA Judgment) was entered on March 14, 1968.

The City of Los Angeles has since filed an appeal with the Court of Appeals. The City of Los Angeles' brief is on file and The Metropolitan Water District of Southern California has filed a brief amicus curiae on behalf of appellant. The defendant's briefs are due March 24, 1970, and the appellant's closing brief will be due July 13, 1970, as of this writing.





Under the ULARA Judgment, the Court appointed the Department of Water Resources as Watermaster and the Department, in turn, created the "Watermaster Service Area" pursuant to Division 2, Part 4, Chapter 2 of the California Water Code. As stated in the Judgment (Section X, paragraph 1), the Watermaster was appointed to assist the Court in the administration and enforcement of the provisions of the Judgment, and to keep the Court fully advised in the premises. It is hoped that this appointment, as Watermaster, may be beneficial to the parties to the suit, serve the best interests of the State, and aid in accomplishing the results contemplated by Section 4025 of the Water Code.

The Upper Los Angeles River Area (hereinafter referred to as ULARA) encompasses all of the watershed of the Los Angeles River and its tributaries above the junction of the surface channels of the Los Angeles River and the Arroyo Seco at a point designated as Los Angeles County Flood Control District Gaging Station F-57C. The entire area consists of approximately 329,000 acres, comprising 123,000 acres of valley fill area, referred to as the ground water basins, and 206,000 acres of hill and mountain areas. ULARA is bounded on the north by the Santa Susana Mountains and on the west by the Simi Hills. To the south, the Santa Monica Mountains separate it from the Los Angeles Basin and to the east the San Gabriel Mountains separate it from the San Gabriel Basin.

ULARA, as defined in the Judgment, has four distinct hydrologic ground water basins which the Watermaster is required to administer independently of each other. The water supplies of these basins are separate and independent, and are replenished by deep percolation from rainfall and from a portion of the water that is delivered for use within these basins and which returns to the ground water body. The four ground water basins in ULARA are the San Fernando Basin, the Sylmar Basin, the Verdugo Basin, and the Eagle Rock Basin. These ground water basins are described below and depicted in Plate 1.

San Fernando Basin

The San Fernando Basin is the latest of the four basins in ULARA. It consists of approximately 112,047 acres and comprises 90.8 percent of the total valley fill. It is bounded on the east and northeast by the San Rafael Hills and Verdugo Mountains, on the northwest and west by the Santa Susana Mountains and Simi Hills, and on the south by the Santa Monica Mountains.

Sylmar Basin

The Sylmar Basin is located on the northerly part of ULARA. It consists of approximately 5,565 acres and comprises 4.5 percent of the total valley fill. It is bounded on the north and east by the San Gabriel Mountains; the topographic divide in the valley fill, lying between the Mission Hills and San Gabriel Mountains, divide it on the west; and to the south it is divided by the eroded limb of the Little Tujunga syncline.

Verdugo Basin

The Verdugo Basin is located to the north and east of the Verdugo Mountains in ULARA. It consists of approximately 4,400 acres and comprises 3.8 percent of the total valley fill. It is bounded on the north by the San Gabriel

Mountains, on the south and southwest by Verdugo Mountains, on the southeast by the San Rafael Mountains, and on the east by the ground water divide between the Monk Hill Subarea of the Raymond Basin and the Verdugo Basin.

Eagle Rock Basin

Eagle Rock Basin is the smallest of the four basins in ULARA and comprises approximately 807 acres and consists of 0.6 percent of the total valley fill. It is located in the extreme southeast corner of ULARA. No determination was made regarding overdraft or surplus in the Eagle Rock Basin. Therefore, no restrictions on ground water extractions were imposed on the Eagle Rock Basin.

Except for Sparkletts Drinking Water Corporation and Deep Rock Artesian Water Company, there are no parties to the Judgment that extract water from Eagle Rock Basin. The safe yield of the basin, under 1964-65 conditions, was set at 70 acre-feet.

Watermaster Service

Watermaster Service is administered by the California Department of Water Resources in accordance with Division 2, Part 4, of the California Water Code. Under Section 4025 of the Water Code, the Department is authorized to divide the State into watermaster service areas. Pursuant to Section 4026, such service areas are created from time to time as rights to water are ascertained and determined. Particularly where ground water is concerned, such rights are usually ascertained or determined by court decree. The first watermaster service area was formed in September 1929. Currently there are 19 such areas controlling surface water diversions in Northern California and four in Southern California controlling ground water use.

Scope of Report

This is the Watermaster's first annual report to the Superior Court of Los Angeles County -- and to you as a water user interested in observing water conditions in ULARA. The purpose of this report is to describe water supply conditions in ULARA during the 1968-69 water year (October 1, 1968 through September 30, 1969).

Detailed comments have been prepared on the following topics: nature of water resources development; natural and artificial ground water recharge; use of imported and exported water; ground water extraction; and fluctuations of ground water table. In addition, a separate chapter has been devoted to the Watermaster's administration of the Judgment and the cost of watermaster service in the 1968-69 water year.

Activities of the Watermaster

The first order of business for the Watermaster began with the opening of the First Advisory Board Meeting held on August 28, 1968. During that meeting, the Watermaster met with the newly appointed members of the Advisory Board. Board members, six in all, were appointed in accordance with the ULARA Judgment. The purpose of the Board is to advise the Watermaster in the administration of its duties. The appointed members of the Board are:

City of Los Angeles	Gerard A. Wyss Melvin L. Blevins
City of Burbank	Ralph Foy
City of Glendale	Lauren W. Grayson Chairman of Board
Crescenta Valley County Water District	Henry Ordunio
City of San Fernando	Robert James

The first meeting of the Board, in addition to electing a Chairman, approved the 1968-69 budget. During a subsequent meeting held on February 3, 1969, the Board discussed and reviewed a proposed operational procedures and policies for watermaster service in ULARA. The Watermaster presented its work accomplishments up to that period and submitted its proposed budget for 1969-70. A third meeting was held on March 10, 1969, at which time the following items were discussed: gasoline pollution problems at Forest Lawn wells; water spreading by the City of Los Angeles, and proposed plans to reclaim ground water and recirculate for lake replenishment. Chapters III and IV will outline these various problems.

The establishment of a watermaster service area in ULARA required considerable study of the area by watermaster personnel. A number of reliable sources of information were investigated; they included the various water agencies within ULARA, the Water Resources Control Board, and the Los Angeles County Flood Control District. The Watermaster wishes to acknowledge its appreciation for the fine cooperation and assistance provided by the various water agencies, the Water Resources Control Board, and the Los Angeles County Flood Control District, which supplied much information and data. The assistance of the various agencies has lightened the task of the Watermaster and, in many cases, has reduced the costs of watermaster service.

A major task of the Watermaster is that of monitoring ground water extractions. In accordance with the operational policies and procedures adopted by the Advisory Board, every ground water pumper reports on a monthly basis his ground water extractions on preprinted forms prepared and supplied by the Watermaster. This makes possible the updating of his water right account (Watermaster Water Production Summary) by electronic machines which compute the amount pumped during the previous month, the total amount pumped thus far during the current

water year, and the amount that can legally be pumped during the remainder of the water year. A copy of the updated account is then mailed to the pumper so that he may more effectively manage his ground water right and use.

The Watermaster field staff will conduct an informal meter testing program; that is, they will verify ground water production at their own discretion of at the request of any party. Defective or inaccurate water measuring devices must be repaired within 30 days after receiving written notice of the results from the Watermaster.

Summary of Operating Conditions

The first year of Watermaster Service began with an exceptionally wet water year. Rainfall in the valley increased by 14 inches over the prior year. As a result, recharge operations were increased by 245 percent. The curtailment of ground water pumping reduced extractions within ULARA by 35 percent. The curtailment of ground water extractions increased Colorado River imports by 64 percent. Table 1 compares statistics for the last two water years on a ULARA-wide basis.

TABLE 1

WATER YEAR SUMMARIES

Item	Water Year	
	1967-68	1968-69
Parties	-	214
Active pumpers	-	23
Active nonparties	-	1
Restricted Pumping, in acre-feet	-	104,040
Watermaster expenses	-	\$11,446.54
Watermaster expenses per acre-foot pumped	-	\$ 0.11
Valley rainfall, in inches	15	29
Spreading Operations, in acre-feet		
LACFCD	13,932	48,080
Los Angeles, City of	11,860	23,426
Extractions, in acre-feet	160,364	104,070
Imports, in acre-feet		
Colorado River Water	20,593	33,878
Owens River Water	323,252	342,665
Delivered to Hill and mountain areas, in acre-feet	38,493	38,909
Exports, in acre-feet		
Owens River Water	122,477	144,434
Sewage	106,490	108,846

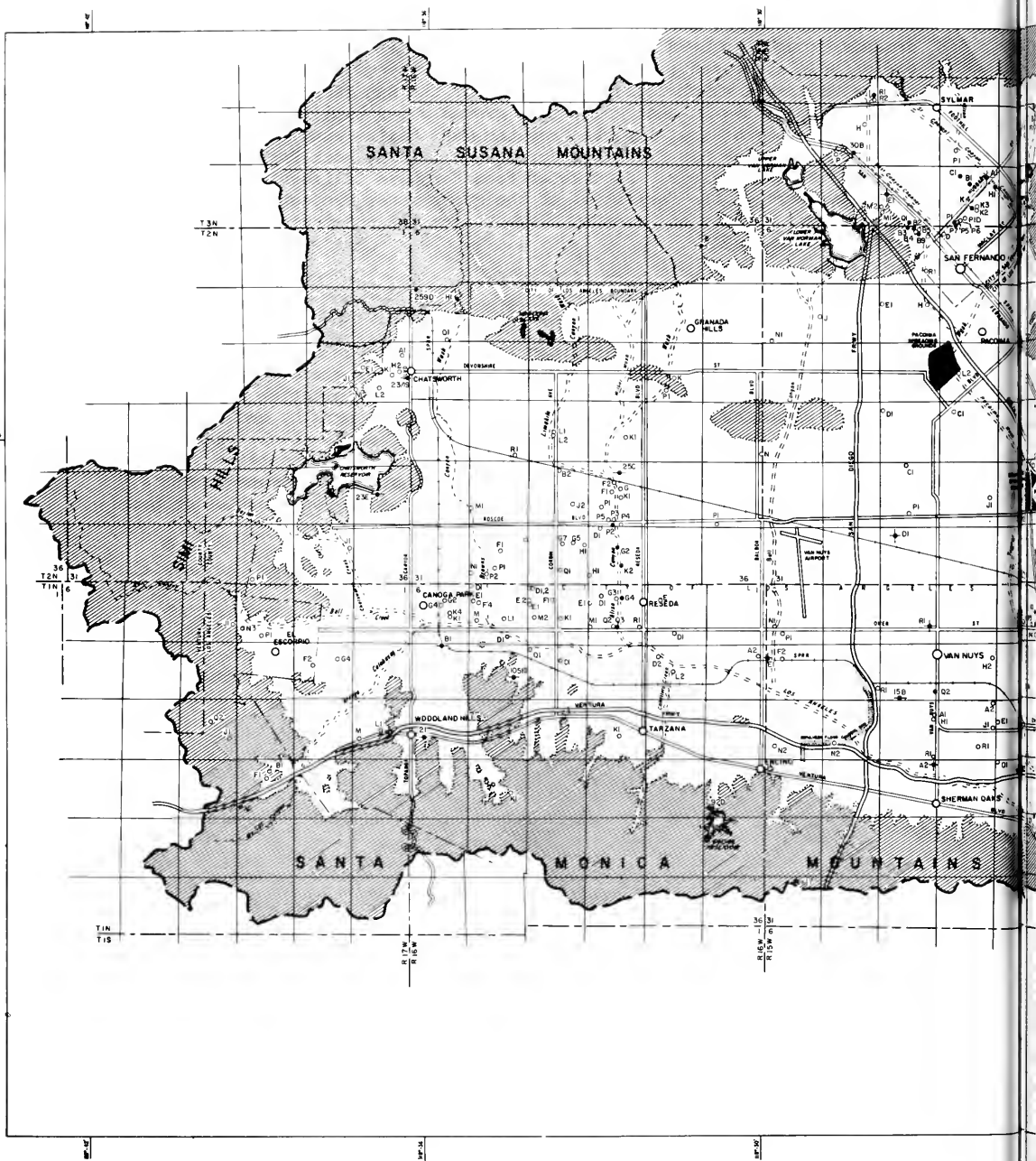
CHAPTER II. WATER SUPPLY CONDITIONS

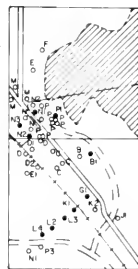
The Upper Los Angeles River Area depends upon many sources of water to meet demands brought on by a fast growth in industry and a continuing population explosion. At present, water supply to ULARA is comprised of precipitation on the watershed which includes portions of the San Gabriel, Santa Monica, Verdugo, and Santa Susanna Mountains; ground water that is in storage within the four basins; imports from the Mono Basin-Owens River system; and in the case of the San Fernando, Verdugo, and Eagle Rock Basins, import from the Colorado River. Soon water from Northern California will be made available through the facilities of the State Water Project. This chapter explores the sources and uses of current supplies and their effect on water conditions in ULARA.

Precipitation

The Upper Los Angeles River Area has the climate of an interior coastal valley and is hotter in the summer and wetter in the winter than the coastal areas which have a Mediterranean type climate. Precipitation varies considerably throughout the ULARA, depending on the topography and the elevation. Mean seasonal precipitation varies from about 14 inches at the western end of the San Fernando Valley to 35 inches in the San Gabriel Mountains. On the average, approximately 80 percent of the annual rainfall occurs in the 4 winter months of December through March. See Plate 2 for location of precipitation stations.

The 1968-69 water year experienced a record rainfall. In the San Gabriel Mountains, some stations received as much as 200 percent of normal. On the average, about 29 inches of rain fell on the valley floor, whereas the mountain area received approximately 43 inches of rainfall. The 29-year (1929-1957) average precipitation for the valley floor and mountain areas are 16.82 and 21.50 inches, respectively. Table 2 presents a record of rainfall at 22 key valley floor precipitation stations which were used and described in the Report of Referee.



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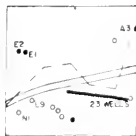
- CLIMATIC STATION
- ▲ WATER SURFACE RECORDER STATION
- ⊕ KEY WELL USED FOR HYDROGRAPH
- ACTIVE WELL
- INACTIVE WELL

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
UPPER LOS ANGELES RIVER AREA
WATERMASTER SERVICE

LOCATION OF WELLS AND PRECIPITATION STATIONS

SCALE OF MILES

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TABLE 2

PRECIPITATION
In inches

Station		:	:	:	1968-69
L.A.C.F.C. :	:	85-year	1967-68	:	Percent of
District :	Name	mean	precipi-	Precipi-	85-year
Number :	:	:	tation	tation	mean
12	Franklin Canyon	18.71	16.71	36.54 ^{a/}	195
13	North Hollywood ^{b/}	16.90	16.67	30.68	182
14	Roscoe-Merrill ^{b/}	14.61	14.06	24.81	170
15	Van Nuys ^{b/}	15.20	13.46	28.16	185
17	Sepulveda Canyon	19.22	15.13	33.23	173
21	Brant Ranch ^{b/}	14.38	11.99 ^{a/}	29.93 ^{c/}	208
23	Chatsworth Reservoir ^{b/}	14.12	14.91	25.05	177
25	Northridge-Andrews ^{b/}	14.59	15.23	24.16	166
29	Granada Pump Plant	17.10	16.17	28.67	168
30	Sylmar ^{b/}	16.70	14.40	32.71	196
33	Pacoima Dam	18.94	15.91	31.77	168
47	Clear Creek City School	32.41	22.32	77.21 ^{a/}	238
53	Colby's Ranch	30.13	21.70	66.56	221
54	Loomis Ranch-Alder Creek	20.90	15.45	38.80	186
210	Brand Park	19.15	15.21	32.38	169
251	La Crescenta ^{b/}	23.64	17.70	47.00 ^{a/}	199
259	Chatsworth Patrol	17.77	16.81	27.36	154
295	Glendale ^{b/}	17.93	14.86	32.75	183
364	Haines Canyon-Lower	24.30	19.51	49.64	204
1074	Little Gleason ^{d/}	24.48	19.55	53.10	217
470	Tujunga-Mill Creek	17.63	17.89	30.89	175
705	Paradise Ranch-Alder Creek	20.70	17.50	41.39	200

^{a/} Partially estimated.^{b/} Valley Station.^{c/} Records obtained from Canoga Park Station No. 1051B.^{d/} Replace Santa Clara Ridge Station No. 419.RUNOFF AND OUTFLOW FROM ULARA

A number of stream gaging stations are maintained throughout ULARA either by the LACFCD or the USGS. Because of the extremely wet season that was experienced in 1968-69, records could not be compiled in time for this report. However, records were obtained for Station No. F-57C which records all surface water outflows from ULARA. See Table 3 for 1968-69 mean daily discharges.

TABLE 3
MEAN DAILY DISCHARGE OF LOS ANGELES RIVER ABOVE ARROYO SECO
In second-feet

Station P-57C	October	November	December	January	February	March	April	May	June	July	August	September
Day												
1	11.1	7.4	6.9	6.9	60.0	2490.0	63.0	31.0	22.0	47.0	22.0	12.4
2	9.8	9.2	7.8	8.7	60.0	1830.0	65.0	25.0	27.0	50.0	23.0	13.0
3	13.7	6.0	7.4	9.2	180.0	1430.0	371.0	22.0	31.0	49.0	24.0	20.0
4	7.4	10.5	8.3	9.2	110.0	470.0	67.0	46.0	47.0	60.0	23.0	18.4
5	6.0	8.7	9.8	8.7	1380.0	515.0	672.0	39.0	53.0	56.0	26.0	19.3
6	5.5	7.4	6.0	9.8	5650.0	867.0	200.0	30.0	54.0	50.0	27.0	17.4
7	8.7	7.4	4.6	11.8	1580.0	916.0	108.0	27.0	52.0	46.0	28.0	13.0
8	6.0	7.8	4.0	10.5	1150.0	560.0	115.0	27.0	50.0	48.0	28.0	14.3
9	5.5	8.3	9.2	10.5	883.0	505.0	138.0	27.0	53.0	52.0	24.0	17.4
10	6.9	7.8	9.8	13.7	256.0	810.0	144.0	30.0	54.0	60.0	22.0	15.6
11	8.3	16.5	115.0	13.0	362.0	550.0	123.0	21.0	56.0	68.0	21.0	17.4
12	9.2	8.7	22.0	11.1	527.0	326.0	104.0	28.0	60.0	68.0	23.0	18.4
13	6.9	7.8	6.0	337.0	500.0	120.0	119.0	26.0	58.0	67.0	23.0	16.5
14	112.0	7.8	8.3	1410.0	293.0	248.0	115.0	25.0	53.0	67.0	22.0	13.0
15	59.0	221.0	34.0	32.0	351.0	286.0	96.0	27.0	53.0	67.0	22.0	18.4
16	10.5	40.0	178.0	17.4	293.0	281.0	228.0	26.0	74.0	67.0	19.3	20.0
17	8.7	9.2	33.0	8.7	169.0	281.0	274.0	27.0	75.0	67.0	14.3	20.0
18	9.2	5.1	18.4	418.0	442.0	120.0	88.0	23.0	62.0	67.0	21.0	19.3
19	11.1	7.4	12.4	3500.0	150.0	82.0	95.0	22.0	53.0	66.0	22.0	18.4
20	9.8	6.9	9.2	4310.0	127.0	160.0	108.0	25.0	56.0	65.0	16.5	16.5
21	12.4	9.8	9.2	7370.0	161.0	250.0	100.0	30.0	56.0	63.0	23.0	15.0
22	11.8	9.8	6.4	1320.0	1290.0	326.0	104.0	50.0	59.0	60.0	15.6	18.4
23	9.2	9.8	8.3	162.0	6480.0	286.0	100.0	40.0	54.0	58.0	15.6	20.0
24	9.2	9.8	9.8	4280.0	5380.0	257.0	64.0	64.0	58.0	54.0	13.7	20.0
25	11.1	8.3	524.0	23400.0	18200.0	236.0	65.0	59.0	58.0	48.0	13.7	20.0
26	15.0	11.8	233.0	11300.0	7680.0	181.0	50.0	67.0	54.0	46.0	17.4	18.4
27	13.7	7.8	27.0	4340.0	4000.0	74.0	54.0	64.0	54.0	38.0	15.6	17.4
28	15.0	7.4	13.7	2720.0	3620.0	65.0	53.0	58.0	49.0	33.0	16.5	14.3
29	8.7	6.9	7.4	1140.0	61.0	39.0	39.0	40.0	46.0	28.0	15.6	15.6
30	134.0	6.9	7.4	80.0	52.0	34.0	27.0	47.0	24.0	15.0	17.4	
31	19.3		10.5	75.0	55.0		27.0		22.0	15.0		
Total	584.7	499.2	1366.8	66343.2	61334.0	14710.0	3956.0	1080.0	1578.0	1661.0	629.8	517.2
Run-off, in acre-feet	1160.0	990.0	2710.0	131600.0	121700.0	29200.0	7850.0	2140.0	3130.0	3290.0	1250.0	1030.0

Maximum Stage 12.80 feet at 0712 on January 25, 1969, discharge 41,820 second feet.

Total Acre-Feet 1968-69 (306050.0)

In subsequent reports, the Watermaster will attempt to present flows at various gaging stations to keep the parties apprised as to the magnitude of runoff from the various areas. Stations that may possibly be utilized for this presentation are as follows:

Station No. 300-R - registers all flow west of Lankershim Blvd. plus outflow from Hansen Dam that is not spread.

Station No. 285-R - registers flow from the westerly slopes of Verdugo Mountains and some flow east of Lankershim Blvd.

Station No. 252-R - registers flow from Verdugo Canyon plus flows from Haines, Dunsmuir, and Pickens Canyons.

Station No. 57-C - registers all surface outflow from ULARA.

Big Tujunga Dam - registers all flow from Big Tujunga Canyon northeasterly of the dam. Runoff below this point flows to Hansen Dam.

Pacoima Dam

- registers all flow from Pacoima Canyon. Runoff below this point flows to Lopez and Pacoima Spreading Grounds.

Ground Water Recharge

Local precipitation can have a marked influence on the ground water supply or water in storage. However, there is a wide variation in the annual amount of runoff as a result of changes in both precipitation and retentive characteristics of the watershed.

ULARA, like other areas in Southern California, is experiencing an accelerated urban development which continuously increases the land area paved with asphalt and concrete. Hence, much of the rainfall is being collected and routed into paved channels which discharge into the Los Angeles River and is then carried out of the basin. Plate 2 depicts those channels which are now lined within ULARA. Table 4 summarizes the spreading operations for the water year 1968-69.

TABLE 4
SPREADING OPERATIONS
In acre-feet

Month	Native water spread by Los Angeles County Flood Control District				Water spread by City of Los Angeles				
	Spreading Basins				Tujunga Spreading Grounds		Headworks Spreading Grounds		Ground water effluent in L. A. River ^{a/}
	Branford	Hansen	Lopez	Pacoima	Native water	Owens River	Spill from	Chatsworth	
					water	Reservoir	Wells	Reseda	
Oct. 1968	10	0	55	0	0	805	0	169	397
Nov.	13	0	0	0	0	0	0	168	481
Dec.	77	0	0	0	0	0	0	162	422
Jan. 1969	153	197	0	2,074	0	0	0	123	234
Feb.	88	7,431	317	4,387	0	2,156	0	0	0
Mar.	47	7,097	361	4,353	1,478	715	86	0	338
Apr.	49	4,504	160	1,876	7,575	0	0	0	910
May	1	3,401	0	1,501	2,896	0	0	0	799
June	6	3,161	0	71	1,103	0	0	0	77
July	15	2,721	0	0	0	0	b/	0	264 ^{b/}
Aug.	1	2,296	0	0	0	0	69	0	970
Sept.	1	1,656	0	0	0	0	0	0	1,029
Totals	461	32,464	893	14,262	13,052	3,676	155	622	5,921

^{a/} Includes industrial discharge, ground water effluent, and surface runoff diverted from Los Angeles River to Headworks Spreading Grounds.

^{b/} During July, a total of 1,396 acre-feet of water was released from Chatsworth Reservoir. However, spreading was discontinued between June 4 and July 25 due to muddy water conditions. The 264 acre-feet spread includes Chatsworth Reservoir releases.

As was mentioned in the previous paragraph, much of the valley floor is covered by impervious materials and is causing the water to run off into lined channels rather than to percolate into the ground water basin. Fortunately, Pacoima Dam and Hansen Dam, which were originally built by the U.S. Corps of Engineers for flood protection, are currently being utilized to regulate storm flows for the purpose of recapturing the flow in spreading basins operated by the Los Angeles County Flood Control District (LACFCD) as well as the City of Los Angeles. Currently, the LACFCD is operating 4 spreading basins; they are: Bradford, Hansen, Lopez, and Pacoima Spreading Grounds. The City of Los Angeles, in turn, operates the Tujunga and Headworks Spreading Grounds. Please refer to Plate 2 for location of these spreading basins. The spreading grounds operated by the LACFCD are utilized for spreading native water, whereas the spreading grounds operated by the City of Los Angeles are utilized to spread Owens River water, spillage from the Chatsworth Reservoir, ground water effluent, and the discharge from the Reseda wells.

Water Quality

The largest single problem encountered in ULARA during 1968-69 was the gasoline pollution in the vicinity of Forest Lawn Cemetery. Gasoline pollution of the underground water in the vicinity of Forest Lawn was first discovered in September 1968. On September 17, 1968, free gasoline was pumped from Well No. 4 (1N/13W-33N3) which is one of five irrigation wells Forest Lawn operates. On September 18, 1968, twenty-five gallons of gasoline were bailed from the well. The pump was renovated and a separator was installed to remove the free gasoline; water was discharged to a storm drain that traverses the part and empties into the Los Angeles River about 1,500 feet east of the Glendale Freeway. See Figure 1 for details.



Figure 1-GASOLINE POLLUTION-FOREST LAWN; GLENDALE; LOS ANGELES

In mid-September, Forest Lawn Memorial Park Association (FLMP) pressure tested all of its underground gasoline storage facilities and found no leaks. On September 19, 1968, Mobil Oil Company pressure tested their 8-inch transmission line in San Fernando Road and found no apparent leaks. Between September 21 and November 4, 1968, FLMP drilled 16 bucket auger holes to determine the area of gasoline pollution. They concluded that the gasoline extended from their Well No. 4 toward Tyburn Street covering an area some 800 feet long and 350 feet wide. Average depth of free gasoline floating on the water surface was 15 inches. They estimated free gasoline in ground water to be in the order of 250,000 gallons. The well locations and approximate areal extent of gasoline pollution as of November 17, 1969, is presented in Figure 1.

In October 1968, Mobil Oil Company again pressure tested its pipeline and reported no leaks. On October 8, 1968, FLMP contacted Western Oil and Gas Association (WOGA) which indicated its desire to help. On October 19, 1968, WOGA tested all underground gasoline storage tanks in the general area and reported no leaks.

Pollock water wells of the City of Los Angeles are within a half mile and the City of Glendale's wells are a little over 3 miles away. Fortunately, the danger of their contamination by the escaped gasoline is not considered imminent. The Cities of Los Angeles and Glendale have taken very active interest in the problem because of the proximity of their well fields to the pollution area. The City of Los Angeles instituted routine monitoring of WOGA observation wells and Forest Lawn wells to determine the extent of the problem.

The WOGA worked a corrective program that includes drilling observation wells for the purpose of defining the extent of the problem, gasoline extraction, and water treatment. Since WOGA's involvement in the abatement process, they have: (1) drilled about 40 observation wells, 10 of which contain free gasoline; (2) extracted about 32,000 gallons of gasoline as of December 1, 1969; and (3) installed three treatment systems for the treatment of the gasoline-water mixture and the separation of gasoline from water for disposal. Recently, WOGA proposed other measures to be implemented in the near future; these are the following:

1. Drilling three gravel packed 16-inch wells for the purpose of creating a definite ground water depression, thus containing the gasoline within its present areal extent.
2. Drilling additional wells for skimming off the gasoline to expedite its removal.
3. Monitoring the areal and vertical extent of the gasoline.

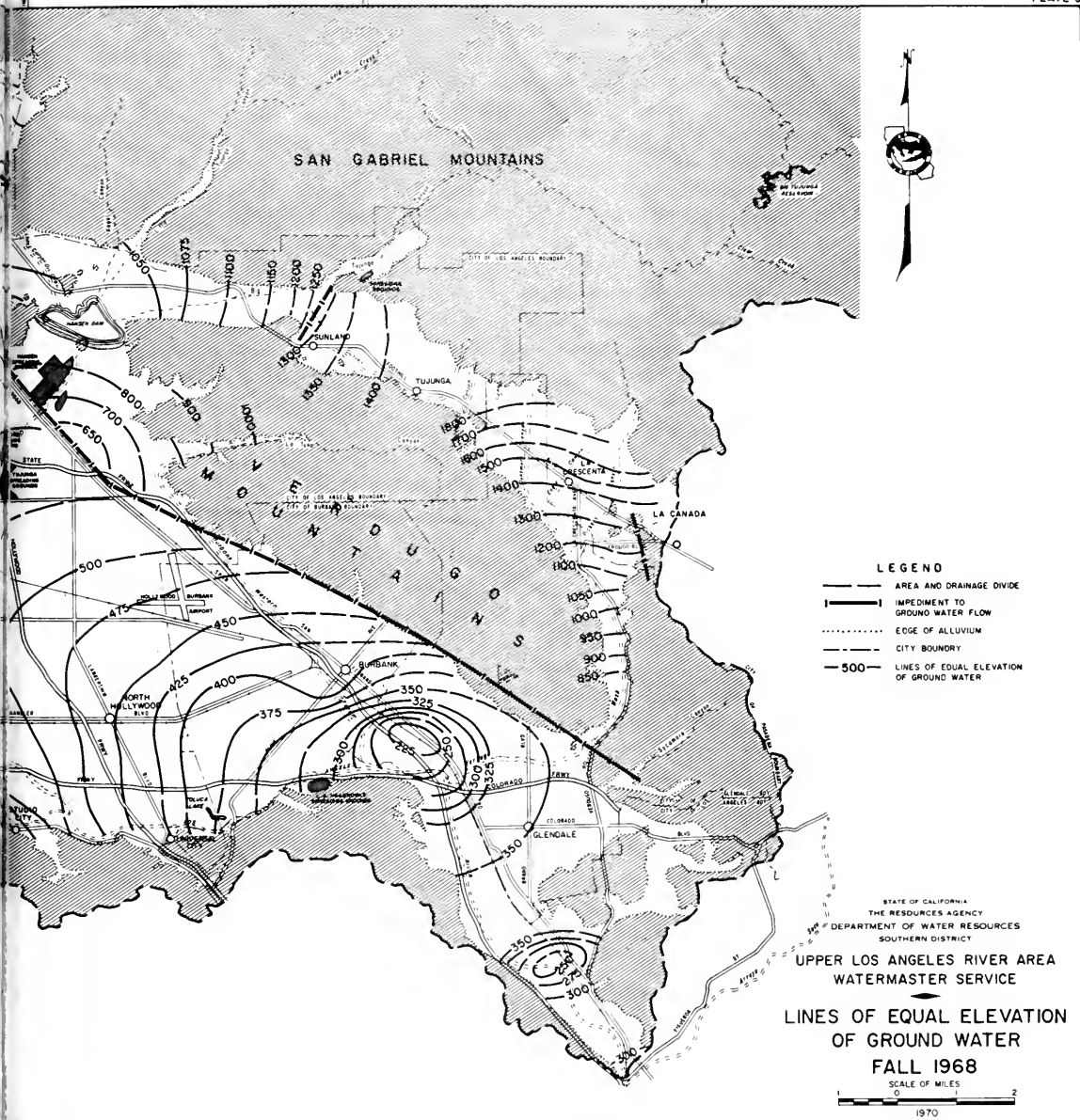
The California Regional Water Quality Control Board L. A. Region has directed its attention to the problem from the beginning and has taken a leading and coordinating role to see that abatement processes are carried forward to clean up and protect the quality of water in the affected area. The Department of Water Resources, upon the request of the Regional Board, has provided valuable advice to the Board on this matter.

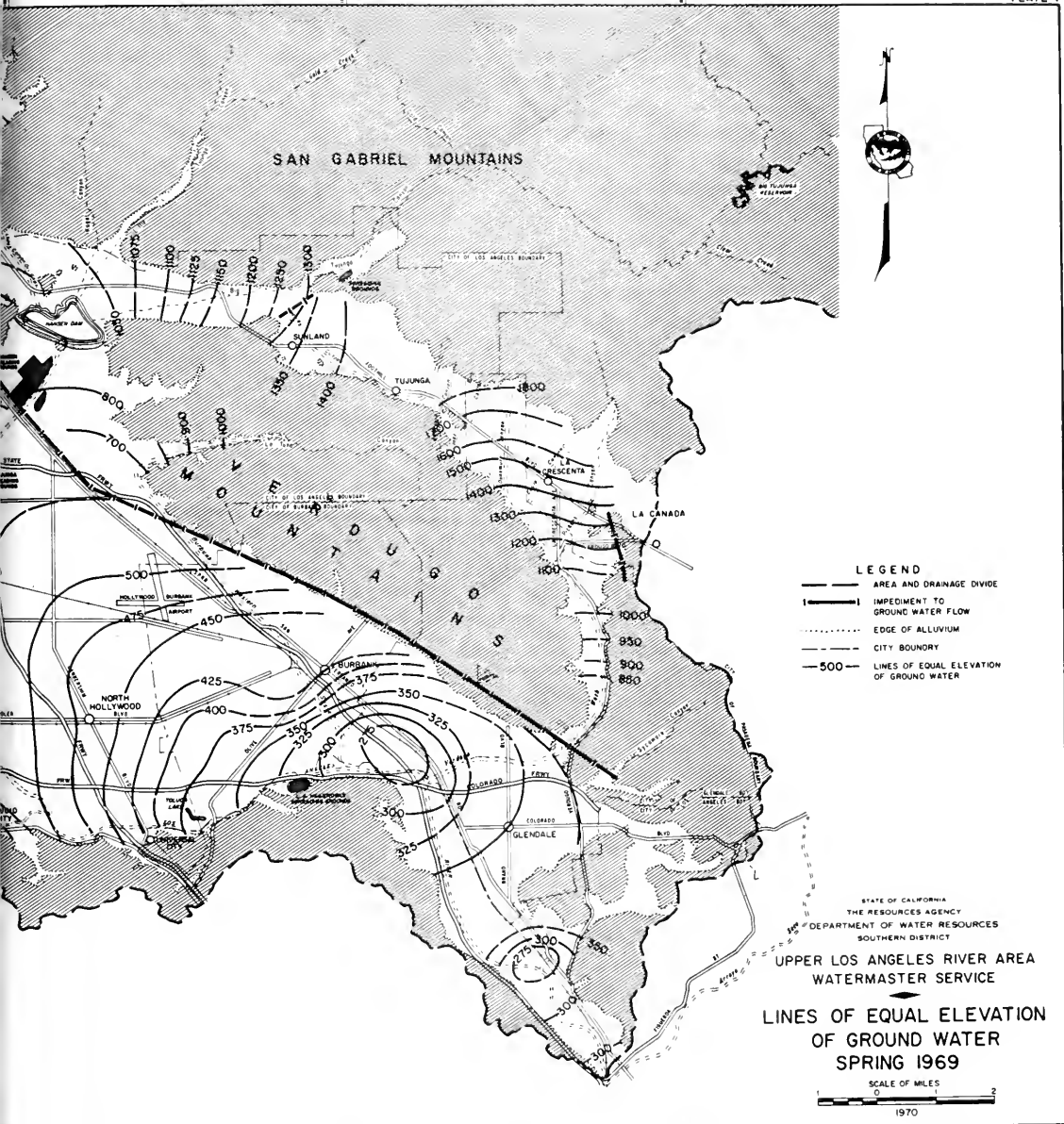
The Watermaster is currently monitoring the extraction of water at the various sites and is requesting WOGA to meter and report monthly all ground water extractions. Further details with respect to the Watermaster's recommendations regarding this problem are contained in Chapter IV.

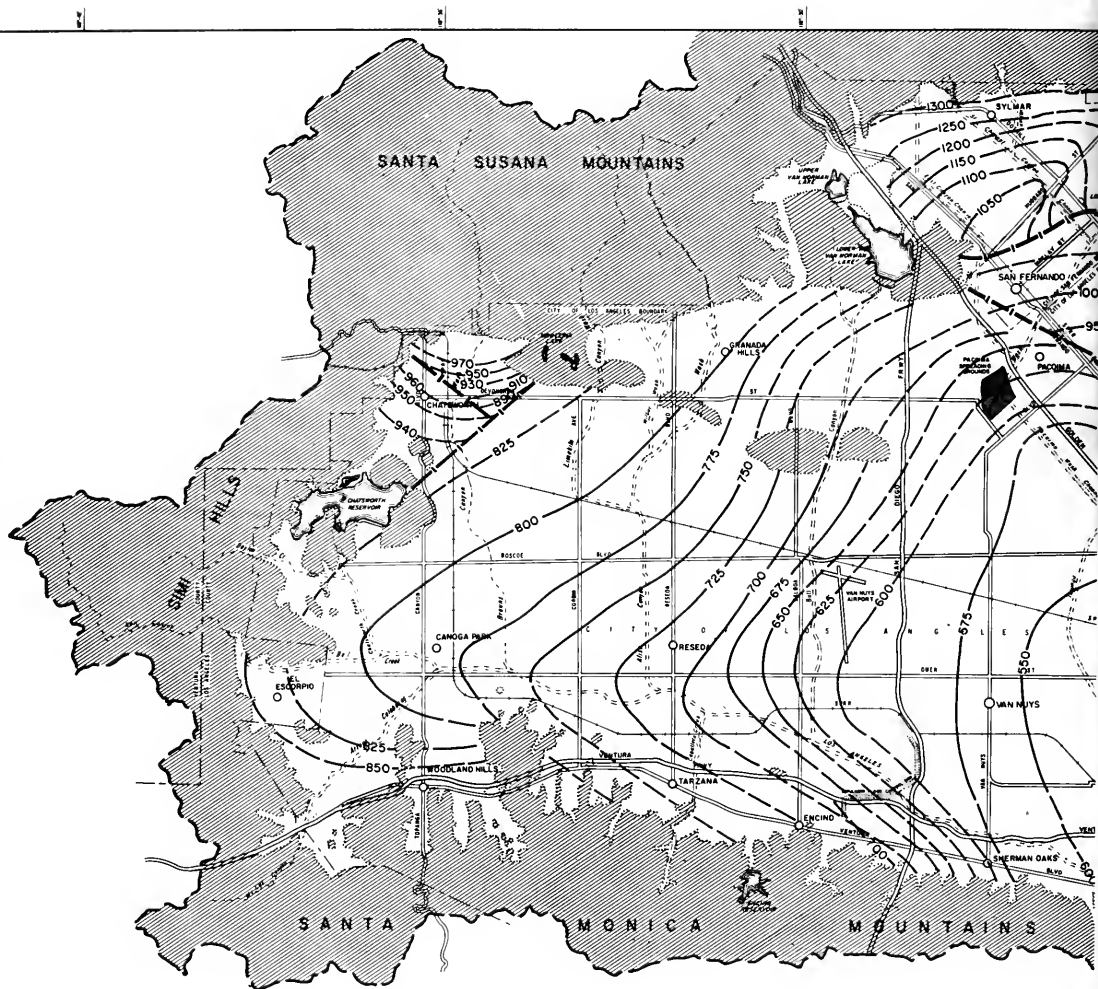
Ground Water Table Elevations

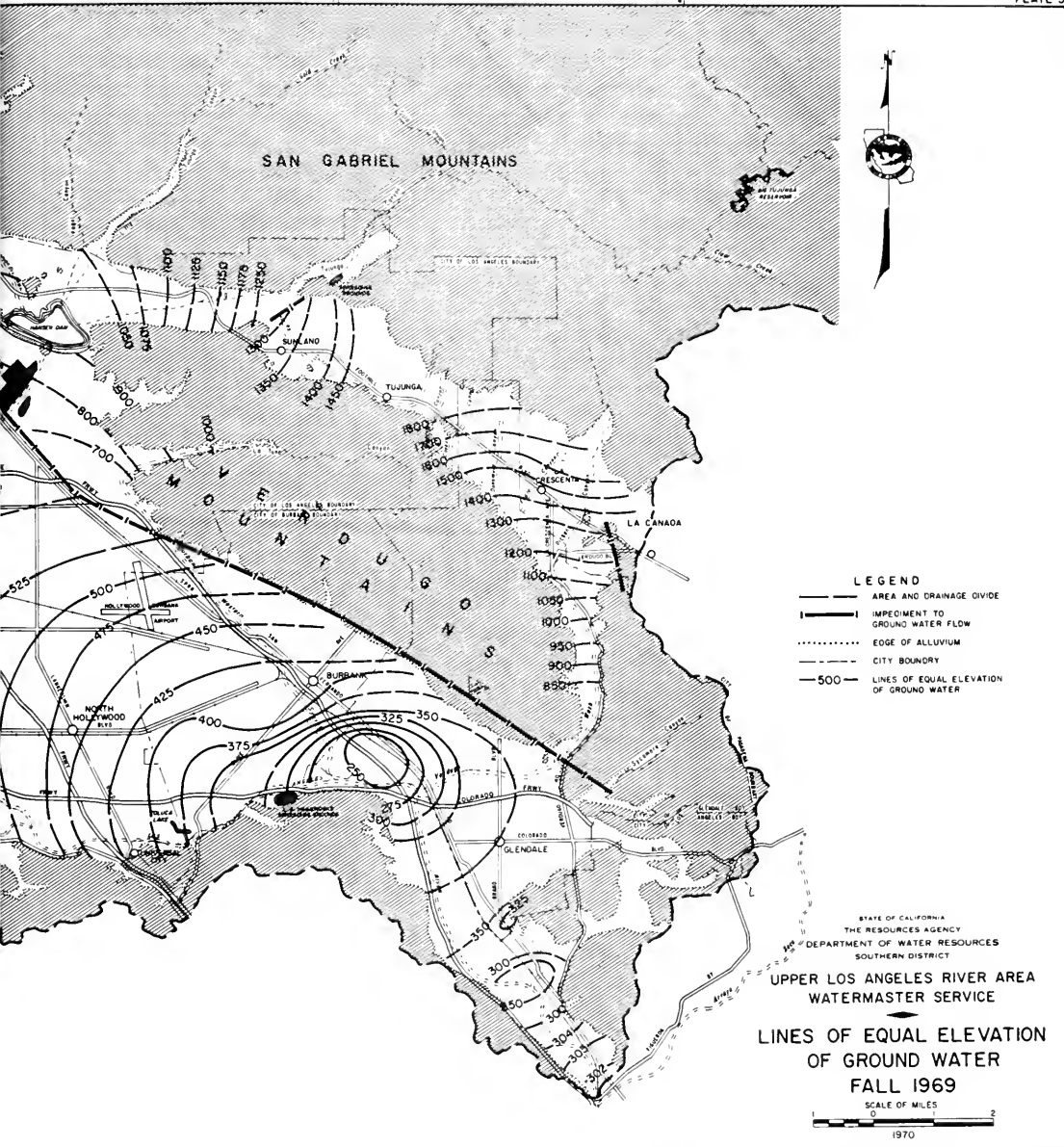
During the 1968-69 water year, the Watermaster collected and processed data to determine prevailing ground water conditions in ULARA. The Watermaster collected ground water contour maps from the Los Angeles County Flood Control District and the City of Los Angeles in order to present the ground water table elevations for the fall of 1968, and the spring and fall in 1969. See Plates 3, 4, and 5.

In addition, Figures 2 and 3 depict the water levels at key wells located within ULARA. Please refer to Plate 2 for location of key wells.









SAN FERNANDO BASIN

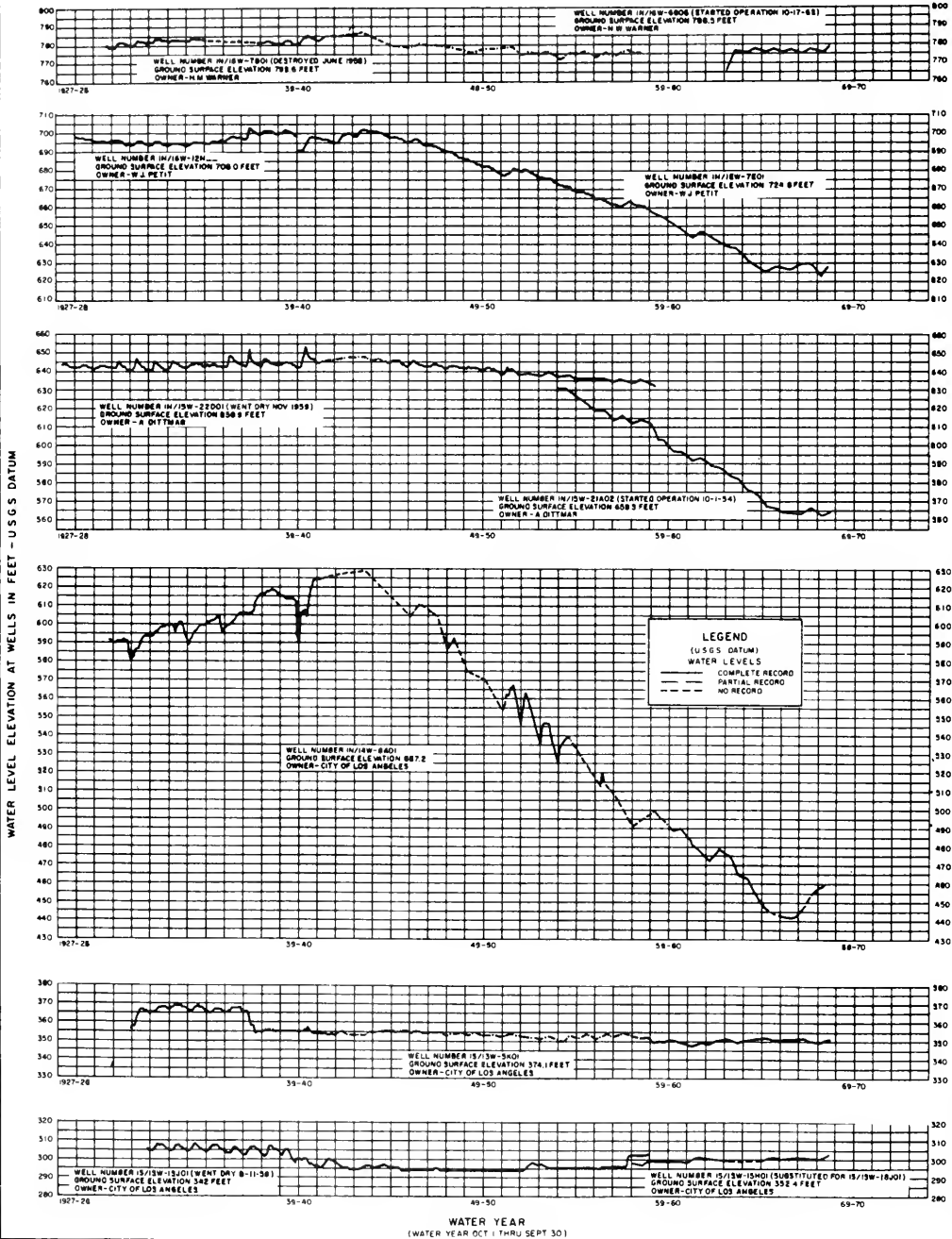
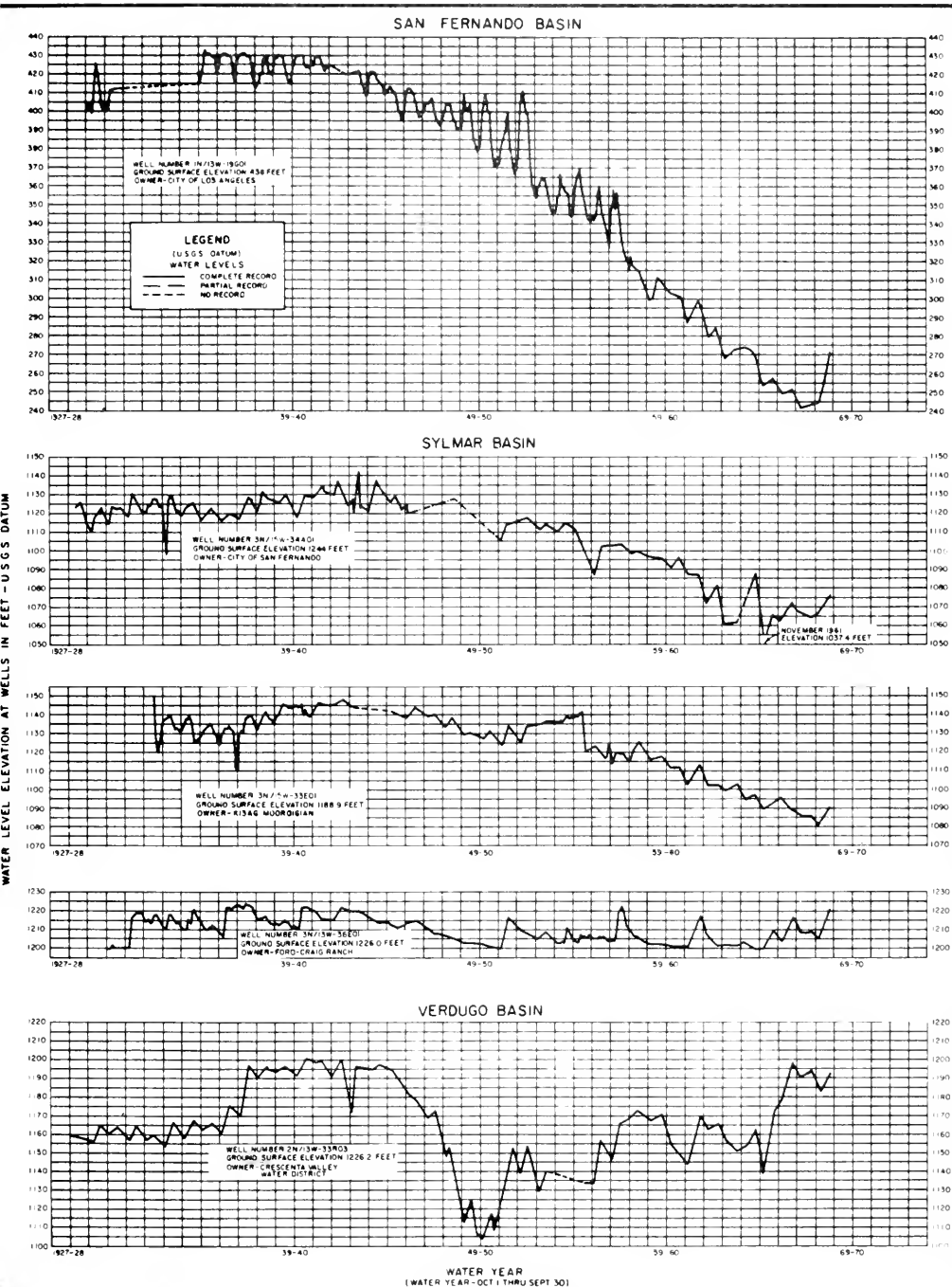


Figure 2—FLUCTUATION OF WATER LEVEL ELEVATION AT WELLS
IN THE SAN FERNANDO BASIN



**Figure 3—FLUCTUATION OF WATER LEVEL ELEVATION AT WELLS
IN THE SAN FERNANDO, SYLMAR AND VERDUGO BASINS**



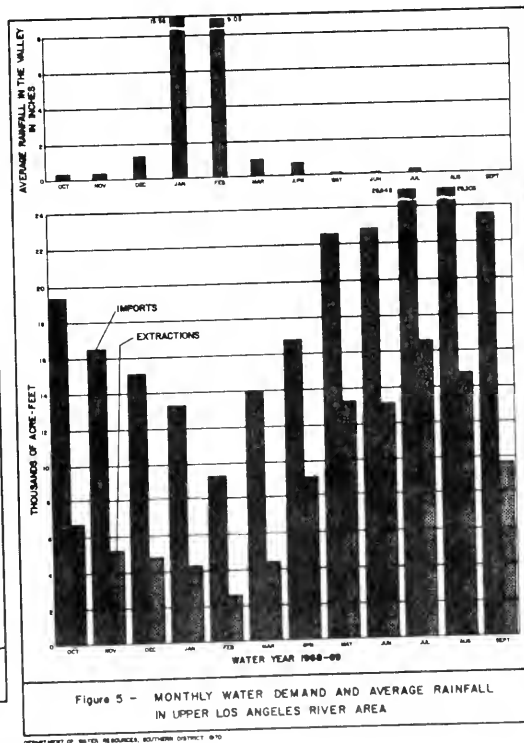
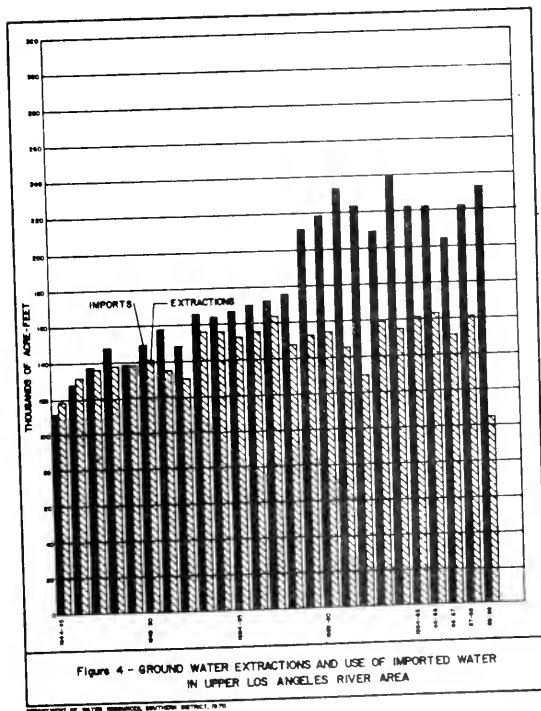
CHAPTER III. WATER USE AND DISPOSAL

Water to be delivered for use in ULARA may be imported water, local ground water, local surface diversions, or a mixture, depending on the area and water system operations. During the 1968-69 water year, water purveyors in ULARA consumed or served more than 336,000 acre-feet of water to their customers. Of this total, approximately 104,000 acre-feet were extracted and approximately 232,000 acre-feet were imported to ULARA.

The adjudication of ground water rights in ULARA restricted all ground water extractions effective October 1, 1968. On that date, ground water extractions were restricted to approximately 104,000 acre-feet. Thus, the basin experienced a cutback of approximately 56,000 acre-feet of ground water extractions between the water years 1967-68 and 1968-69. Restrictions on ground water extractions inevitably requires parties to increase their importation of water to ULARA to make up the difference.

Figure 4 graphically illustrates the annual ground water extractions and total water imported to ULARA beginning with 1944-45 water year. Note the change during 1968-69.

Figure 5 provides another graphical analysis of the monthly relationship between rainfall, ground water extractions, and imported supply. This graph is representative of the entire ULARA and not any specific ground water basin within ULARA. The precipitation values were obtained from those stations that are located on the valley floor. (See Table 2.)



Ground Water Extractions

By letter dated April 26, 1968, the Watermaster informed all parties that were known to be active, that ground water extractions within ULARA would be reduced and controlled by the Watermaster in accordance with the Judgment. The ULARA Judgment limits the amount of ground water each party can extract annually from each of the separate basins to an amount referred to as "Restricted Pumping". Table 5 presents a balance sheet which summarizes each party's water account by listing its "Restricted Pumping" (see Appendix A for any changes); any additional allowable pumping as the result of a water right assignment; amount of ground water extracted during the 1968-69 water year; and the amount that can be carried forward to the succeeding water year.

In order to provide flexibility in the control of ground water extractions, the Judgment contains various provisions which allow the parties to carry over into the succeeding water year a portion of their unused water right and, in some cases, to overextract. This flexibility clause was provided to assist the parties in meeting unforeseen emergencies in water demands. First of all, one provision allows parties to carry over from one water year to another any unused "Restricted Pumping" up to an amount not to exceed 10 percent of that party's "Restricted Pumping". The flexibility clause also allows parties to overextract up to an amount equal to 10 percent of its "Restricted Pumping". However, any overextraction will be deducted from the "Restricted Pumping" in the succeeding water year. Chapter IV contains additional information on this provision.

The metered ground water production from each active well is listed by basin and by party in Appendix B, Table B-1. This tabulation presents the total ground water production as reported by each party. Plates 6 and 7 depict the service area wherein each party delivers its water supply.

In addition to the flexibility clause, the City of San Fernando is allowed, by the Judgment, to exceed its assigned "Restricted Pumping" in Sylmar Basin. The additional allowance for the City of San Fernando is described in the Judgment as "Physical Solution-Sylmar Basin". This provision allows the City of San Fernando to extract up to 850 acre-feet of water per year in addition to the amount that it has received under its "Restricted Pumping". If the City of San Fernando takes, diverts, or extracts water in addition to its "Restricted Pumping", it must immediately notify the City of Los Angeles and the Watermaster in writing, and the City of Los Angeles must reduce its extractions in an amount equal to the amount that the City of San Fernando has exceeded its rights. Chapter IV describes the 1968-69 operation.

The Judgment, in Section IV, also allowed various parties to divert and extract water from the San Fernando Basin in accordance with the terms and conditions of the stipulated Judgments between the City of Los Angeles and said parties (Case No. 650,079). The City of Los Angeles would, in turn, deduct from its "Restricted Pumping" for each year, the aggregate amount of water extracted pursuant to the separate stipulated Judgments.

TABLE 5

RESTRICTED PUMPING AND QUANTITIES EXTRACTED AND ASSIGNED

Party	In acre-feet					
	(1)	(2)	(3)	(4)	(5)	(6)
	Restricted:	Assign-	Allowable	Amount	Balance	Allowable
	Pumping	ments in Restricted Pumping ^{a/}	extraction 1968-69 (1)±(2)=(3)	pumped	(3)-(4)=(5)	carryover into 1969-70
SAN FERNANDO BASIN						
Bartholomew, William O.	15.00	0.00	+ 15.00	0.00	+ 15.00	+ 1.50
Burbank, City of	13,649.00	0.00 ^{b/}	+ 13,649.00	- 13,654.42	- 5.42	- 5.42
California Materials Company	0.00	+ 360.00 ^{b/}	+ 360.00	- 399.57	- 39.57	- 39.57 ^{2/}
Consolidated Rock Products Company	0.00	+ 1,180.00 ^{b/}	+ 1,180.00	- 1,499.57	- 319.57	- 319.57 ^{2/}
Forest Lawn Memorial Park Association	814.00	0.00	+ 814.00	- 585.99 ^{d/}	+ 228.01	+ 81.40
Glendale, City of	12,405.00	0.00	+ 12,405.00	- 12,379.00	+ 26.00	+ 26.00
Harper, Cecilia DeMille	0.00	0.00	0.00	- 28.31	- 28.31	- 28.31
Livingston-Graham, Incorporated	0.00	+ 270.00 ^{b/}	+ 270.00	- 349.07	- 79.07	- 79.07 ^{2/}
Lockheed Aircraft Corporation	239.00	0.00	+ 239.00	0.00	+ 239.00	+ 23.90
Los Angeles, City of	63,257.00	- 3,500.00 ^{b/}	+ 59,757.00	- 59,701.82 ^{e/}	+ 55.18	+ 55.18
McCabe, Celeste Louise	1.00	0.00	+ 1.00	0.00	+ 1.00	+ 0.10
Mena, John and Barbara ^{a/}	0.00	0.00	0.00	0.96	- 0.96	- 0.96
Monterita Lake Association	0.00	0.00	0.00	- 7.15	- 7.15	- 7.15
Riverwood Ranch Mutual Water Co.	0.00	0.00	0.00	- 7.24	- 7.24	- 7.24
Sears, Roebuck and Company	0.00	+ 100.00 ^{b/}	+ 100.00	- 228.96	- 128.96	- 128.96 ^{d/}
Southern Service Company, Ltd.	0.00	0.00	0.00	- 93.82	- 93.82	- 93.82
Sportsmen's Lodge, Incorporated	0.00	0.00	0.00	- 110.04	- 110.04	- 110.04
Toluca Lake Property Owners' Association	23.00	0.00	+ 23.00	- 30.40	- 7.40	- 7.40
Valhalla Memorial Park	184.00	0.00	+ 184.00	- 166.56	+ 17.44	+ 17.44
Van de Kamp's Holland Dutch Bakers, Inc.	93.00	0.00	+ 93.00	- 22.02	+ 70.98	+ 9.30
Walt Disney Productions	0.00	+ 1,590.00 ^{b/}	+ 1,590.00	- 1,643.21	- 53.21	- 53.21 ^{2/}
Wright, J. Marion and Alice M.	0.00	0.00	0.00	- 7.04	- 7.04	- 7.04
Subtotals	90,680.00	0.00	+ 90,680.00	- 90,915.15	- 235.15	- 672.94
SYLMAR BASIN						
Boise Cascade Building Company ^{a/}	609.00	0.00	+ 609.00	- 15.28	+ 593.72	+ 60.90
Brown, Charles T.	0.00	0.00	0.00	0.00	0.00	0.00
Church of Jesus Christ ^{g/} of the Latter Day Saints	0.00	0.00 ^{f/}	0.00	- 318.84	- 318.84	- 318.84
Los Angeles, City of	2,818.00	- 300.00 ^{f/}	+ 2,518.00	- 2,210.81	+ 307.19	+ 251.80
Moordigian, Kisag	46.00	- 40.00 ^{g/}	+ 6.00	0.00	+ 6.00	+ 0.60
San Fernando, City of	2,737.00	+ 340.00 ^{g/}	+ 3,077.00	- 3,022.69	+ 54.31	+ 54.31 ^{2/}
Subtotals	6,210.00	0.00	+ 6,210.00	- 5,567.62	+ 642.38	+ 48.77
VERDUGO BASIN						
Crescenta Valley County Water District	3,294.00	0.00	+ 3,294.00	- 3,287.36	+ 6.64	+ 6.64
Glendale, City of	3,856.00	0.00	+ 3,856.00	- 3,430.29	+ 425.71	+ 385.60
Subtotals	7,150.00	0.00	+ 7,150.00	- 6,717.65	+ 432.35	+ 392.24
ULARA TOTALS	104,040.00	0.00	+104,040.00	-103,200.42	+ 839.58	- 231.93

a/ Refer to Table 8 and Appendix A for information concerning assignments of "Restricted Pumping" or prior ownership.

b/ Assignment pursuant to separate Stipulated Judgment.

c/ Reverts to City of Los Angeles.

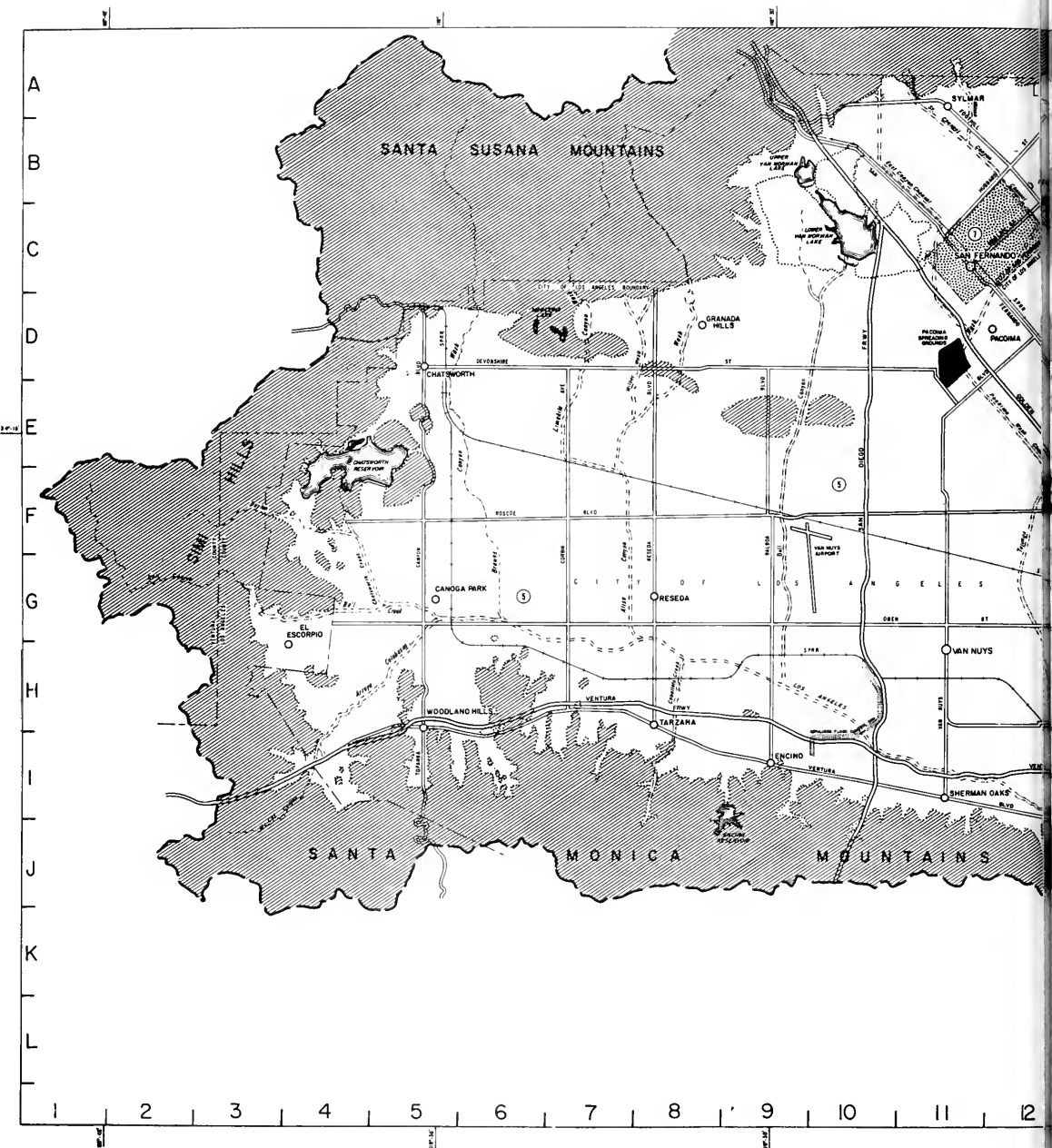
d/ Excludes 239.98 acre-feet extracted from Forest Lawn Well No. 4.

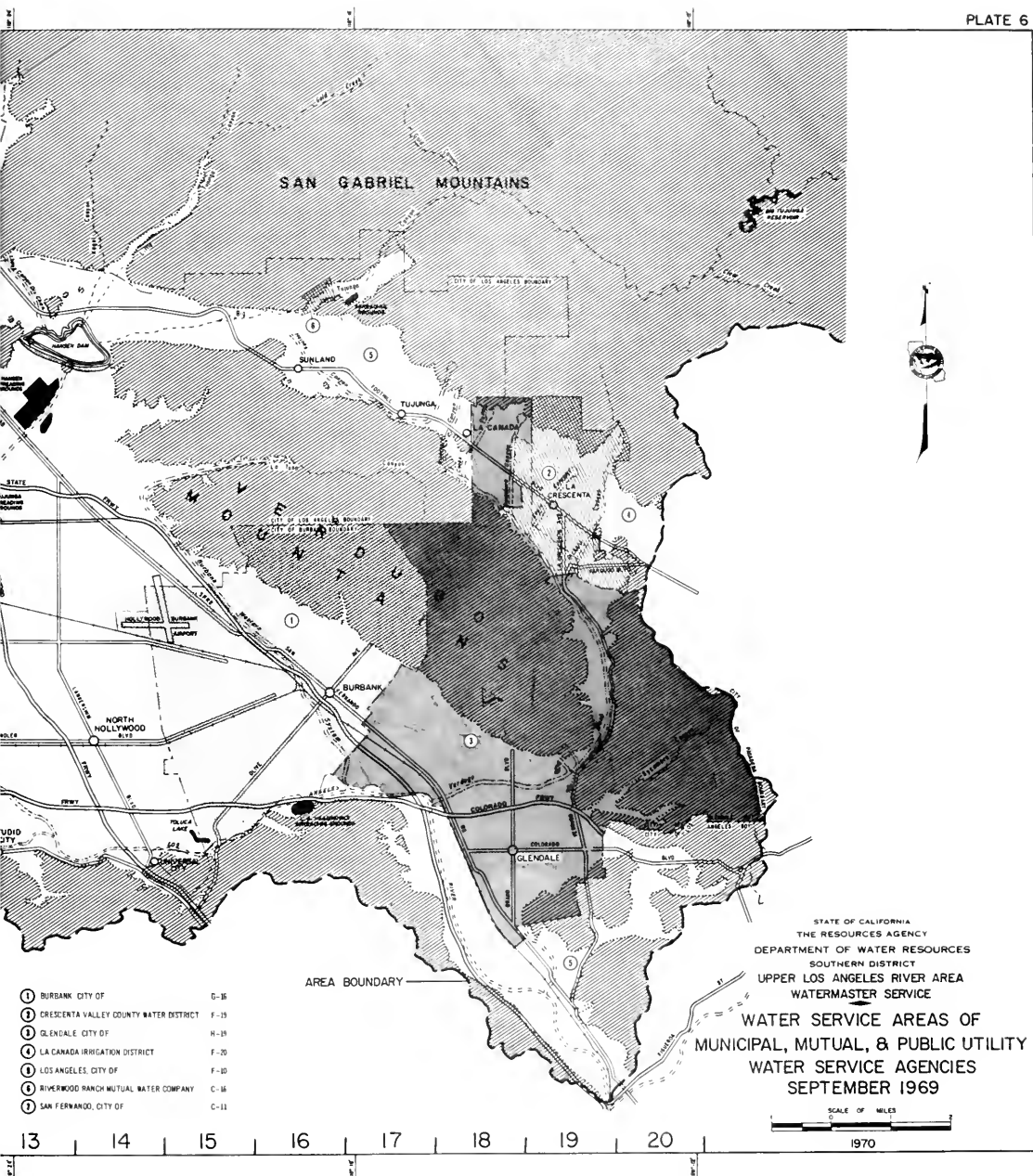
e/ Excludes extractions from Reseda Wells which totaled 629.94 acre-feet.

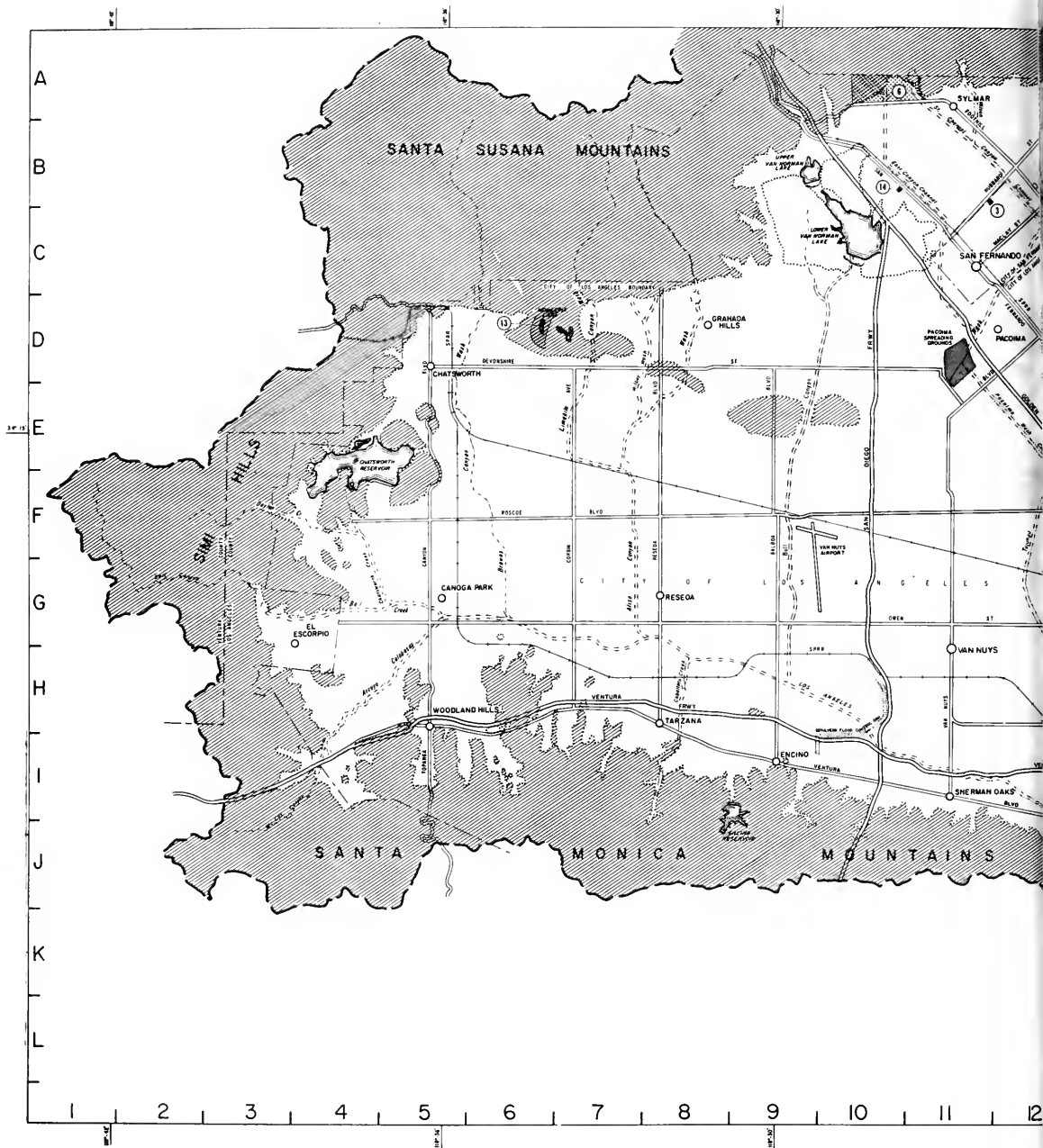
f/ Assignment pursuant to Physical Solution - Sylmar Basin.

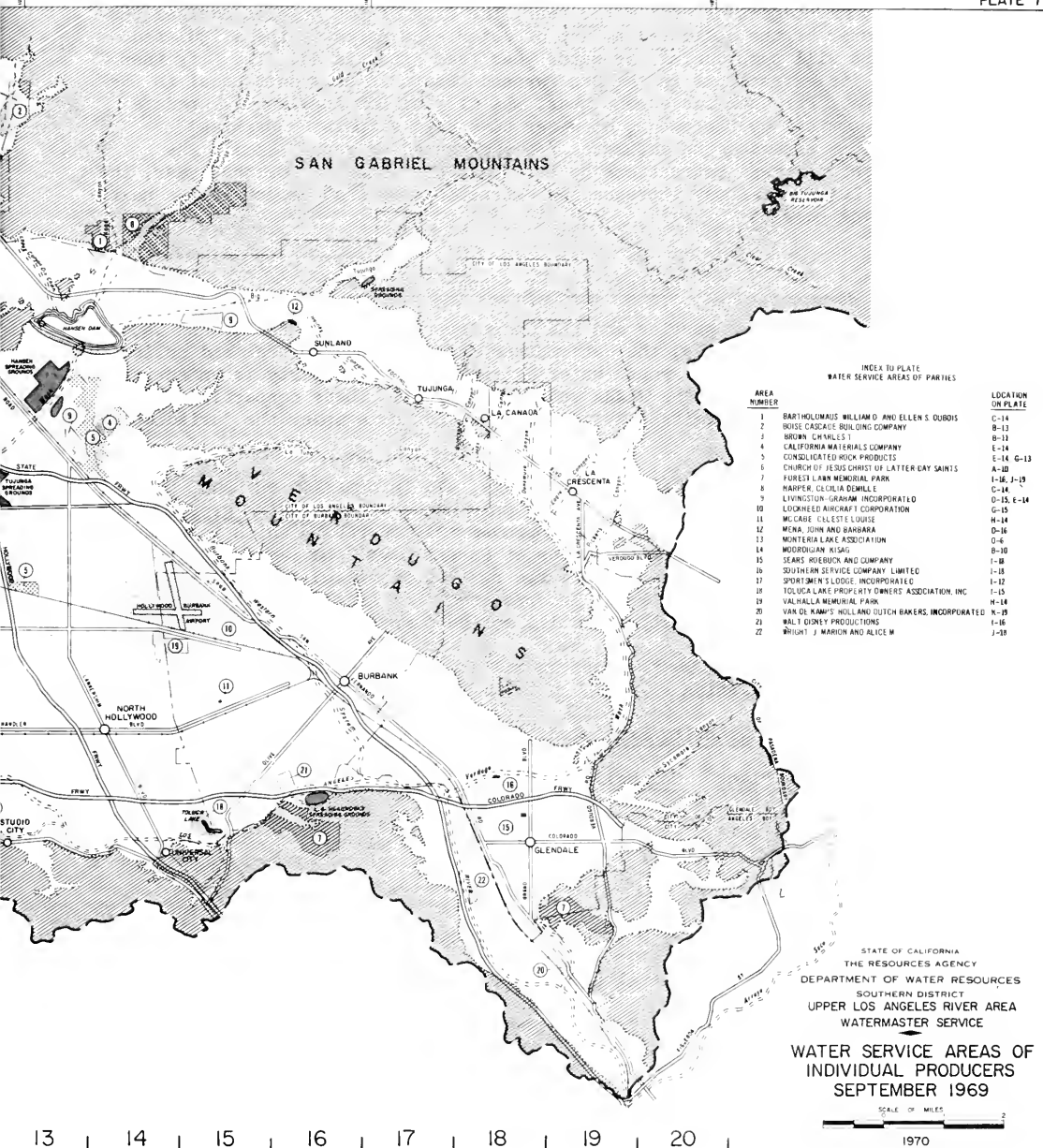
g/ Water use license to City of San Fernando

h/ Includes assignments pursuant to footnotes (f) and (g).









At the commencement of each water year, the City of Los Angeles advises the Watermaster of the estimated amount of water each party to the stipulated Judgments will pump during the water year (see Appendix A). The City then reduces its extractions in the San Fernando Basin in an amount equal to the estimates. For each subsequent year, the City of Los Angeles will reduce its extractions by the amount of water that said stipulated parties' extractions exceeded the estimates for the preceding year. Should the stipulated parties' extractions be less than the estimate for that year, the City of Los Angeles may increase its extractions by that amount in the next succeeding year.

Extractions by Nonparties

In order to keep the parties and the Court apprised of all the ground water extractions within ULARA, the Watermaster has attempted to seek and collect information on nonparty ground water extractions. A nonparty is an entity which was not named in the ULARA water right suit. These nonparties and parties which were dismissed by the court do not come under the jurisdiction of the Watermaster.

To the best of the Watermaster's knowledge, and information on hand, the Western Oil and Gas Association is the only nonparty extracting ground water within ULARA. The Watermaster has approved this operation which is necessary for the control of gasoline pollution at Forest Lawn. No report on ground water extraction will be made as to the parties dismissed from the action, such as Glenhaven Memorial Park, Incorporated, Los Angeles County Waterworks District No. 21, etc., which are still active pumpers.

Ground water extracted by the Western Oil and Gas Association is shown in the following tabulation.

Quantity Extracted, in 1,000 Gallons

<u>Healy-Deburring Plant</u>		<u>Cox Wells</u>	<u>Healy-Deburring Plant</u>		<u>Cox Wells</u>
October	0	0	April	0	0
November	1	0	May	2	0
December	2	0	June	0	0
January	0	0	July	432	0
February	0	0	August	432	10
March	0	0	September	432	864
Subtotal (1,000 gal.)				1,301	874
Total acre-feet				6.67	

Water Wells in ULARA

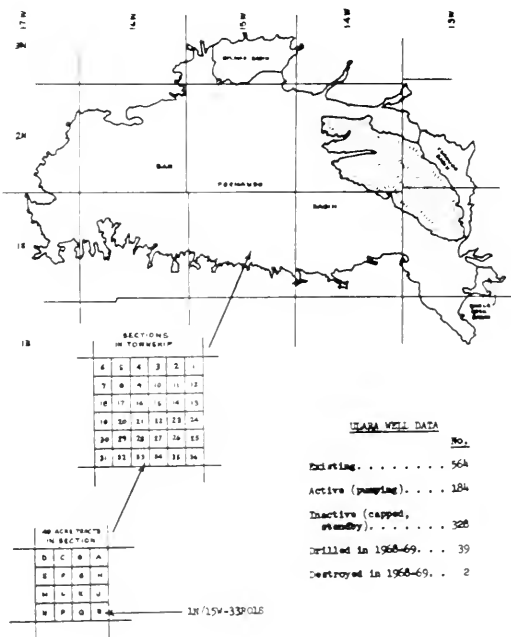
The Report of Referee described the wells in ULARA according to a number-location identification system devised by the Los Angeles County Flood Control District. However, the Watermaster has redesignated the wells in accordance with its recording system. Each water well in ULARA was assigned a state well number in order to simplify the administration of the Judgment and the monitoring of ground water extractions. A cross-index between State well numbers and County numbers should be completed by March 1970. At that time, it will be made available to all interested parties. The 1969-70 annual report will include a cross-index of well numbers.

A state well numbering system was adopted by the State several years ago which utilizes the United States Public Land Survey System. A graphical illustration of the system in ULARA is shown below. Each state well number consists of a township, range, and section number; a letter to indicate the 40-acre plot where the well is located; and a number to identify the particular well in the section; and the letter "S" indicating that the well location is referenced to the San Bernardino Base and Meridian.

For instance, State Well No. 1N/15W-33R01S would be the first well assigned a number in Township 1 North, Range 15 West, Section 33, and in the 40-acre Tract "R". All wells in ULARA are referenced to the San Bernardino Meridian so the letter "S" is normally dropped in this report.

As a matter of course, the Watermaster locates all new wells by survey and assigns a new state well number. The parties that submit detailed information as to the location of the well will preclude the Watermaster's requirement for a survey. If the well is suspected of being abandoned or destroyed, the Watermaster will attempt to tag the well, requesting that the owner inform the Watermaster of his intentions. In this manner, the owner may be informed of the proper methods of destroying the well. Each party is required to notify the Watermaster whenever a new well is drilled.

During 1968-69, the City of Los Angeles drilled seven new wells in the Sunland-Tujunga area, Toluca Lake Property Owner's Association redrilled an old existing well, and Western Oil and Gas Association drilled 31 wells near Forest Lawn in Glendale.



Imports and Exports of Water

Rapidly expanding residential, commercial, and industrial areas within ULARA require the importation of additional water supplies. The City of Los Angeles has kept abreast of this demand by a 338 mile aqueduct for the importation of Owens River and Mono Basin water. The City is currently constructing a second barrel for the aqueduct. As of September 1969, 84 percent of construction was completed and a target date of May 7, 1970, set for operation.

In addition to the City's aqueduct, the Colorado River aqueduct constructed by The Metropolitan Water District of Southern California began delivery of water in 1940. The Metropolitan Water District of Southern California supplies water to the Cities of Burbank, Glendale, and Los Angeles. The Crescenta Valley Water District and La Canada Irrigation District also import Colorado River water through the facilities of the Foothill Municipal Water District, which is a member agency of The Metropolitan Water District of Southern California.

Exports from ULARA, exclusive of sewage, are limited to the City of Los Angeles, which exports water consisting of imported water and ground water extractions. Listed in Table 6 are the ULARA imports and exports.

Physical Data by Basins

In order to comply with the Court's directive, the Watermaster has collected and summarized data on Table 7 which shows the water supply and disposal in each of the basins.

TABLE 6

ULARA IMPORTS AND EXPORTS

Source and Agency	Quantity, in acre-feet	
	1967-68	1968-69

IMPORTSColorado River Water

Burbank, City of	4,685	11,932
Crescenta Valley Water District	880	686
Glendale, City of	3,872	8,679
Los Angeles, City of	10,290	11,736
La Canada Irrigation District	866	845

Subtotal	20,593	33,878
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Owens River Water

Los Angeles, City of	<u>323,252^{a/}</u>	<u>342,665^{a/}</u>
Total	343,845	376,543

EXPORTSOwens River Water

Los Angeles, City of	<u>-122,477</u>	<u>-144,434</u>
Net Import	221,368	232,109

^{a/} This value represents the summation of the gross amount of water delivered to and exported from the ULARA. It does not include operational releases, reservoir evaporation, and water spread during the year.

TABLE 7

SUMMARY OF WATER SUPPLY AND DISPOSAL BY BASINS
In acre-feet

SAN FERNANDO BASIN

Water source and use	City of : Burbank	City of : Glendale	City of : Los Angeles	City of : San Fernando	All others :	Total
<u>Extractions</u>						
Total quantity	13,654	12,379	59,702 ^{a/}	0	5,419	91,154
Used in Valley Fill	13,140	8,822	5,699	0	5,179 ^{b/}	32,840
<u>Imports</u>						
Colorado River Water	11,932	8,679	7,889	0	0	28,500
Owens River Water			335,235			335,235
Ground water from Sylmar Basin			2,211	2,751	0	4,962
<u>Exports</u>						
Ground water to Verdugo Basin		2,197	0		0	2,197
Out of ULARA	0	0	54,632	0	0	54,632
Owens River Water Out of ULARA			144,434			144,434
to Eagle Rock Basin			0			0
Colorado River to Verdugo Basin	0	4,258	0		0	4,258
<u>Water delivered to hill and mountain areas</u>						
Ground water	514	1,360				1,874
Owens River Water			29,701			29,701
Colorado River Water	455	584	2,756			3,795
<u>Water outflow</u>						
Surface						306,050 ^{c/}
Subsurface						142
Sewers	14,417 ^{d/}	18,105	70,990	1,411	0	104,923

SYLMAR BASIN

Water source and use	City of : Los Angeles	City of : San Fernando	All others :	Total
<u>Extractions</u>				
Total quantity	2,211	3,023	334	5,568
Used in Valley Fill	0	272	334	606
<u>Imports</u>				
Owens River Water	6,520			6,520
<u>Exports</u>				
Ground water to San Fernando Basin	2,211	2,751	0	4,962
<u>Water delivered to hill and mountain areas</u>				
Owens River Water	337			337
<u>Water outflow</u>				
Surface				5,000 ^{e/}
Subsurface to San Fernando Basin				645
Sewers	710	140	0	850

SUMMARY OF WATER SUPPLY AND DISPOSAL BY BASIN
In acre-feet
(continued)

VERDUGO BASIN

Water source and use	Crescenta Valley : County Water District	City of : Glendale	City of : Los Angeles	Total
<u>Extractions</u>				
Total quantity	3,287	3,430	0	6,717
Used in Valley Fill	3,232	3,430	0	6,662
<u>Imports</u>				
Colorado River Water	686	4,258	0	4,944
Owens River Water			910	910
Ground water from San Fernando Basin	0	2,197	0	2,197
<u>Exports</u>	0	0	0	0
<u>Water delivered to hill and mountain areas</u>				
Colorado River Water	14	447	0	461
Owens River Water			332	332
Ground water	55	309		364
<u>Water outflow</u>				
Surface				-- f/
Subsurface				
to Monk Hill Basin				300 g/
to San Fernando Basin				-- h/
Sewage	0	1,013		1,013

EAGLE ROCK BASIN

Water source and use	City of : Los Angeles	All others :	Total
<u>Extractions</u>			
Total quantity	0	197	197
Used in Valley Fill	0	0	0
<u>Imports</u>			
Owens River	0	0	0
Colorado River	3,847	0	3,847
Ground water	0	0	0
<u>Exports</u>			
Ground water	0	197	197
<u>Water delivered to hill and mountain areas</u>			
Colorado River Water	2,045	0	2,045
<u>Water outflow</u>			
Surface			-- j/
Subsurface			-- k/
Sewers	2,060	0	2,060

- a/ Excludes production from Reseda wells.
b/ Excludes production from Forest Lawn Well No. 4.
c/ The 29-year mean (1929-57) for base low flow is 7,580 acre-feet.
d/ Includes reclaimed waste water which infiltrates into the ground water basin after being discharged in L. A. River and while on route to gaging station F-57C.
e/ Surface outflow is not measured. Calculated average surface outflow by Lavery - SF Exhibit 57.
f/ Information not available in time for report.
g/ Based on 29-year average (1929-57).
h/ Assumed to be nil.
i/ Information not available.
j/ There is little or no subsurface flow to San Fernando Basin.
k/



CHAPTER IV. ADMINISTRATION OF THE JUDGMENT

When the Court appointed the Department of Water Resources as Watermaster in the Upper Los Angeles River Area, it did so for the specific purpose of administering and enforcing the provisions of the Judgment and to keep the Court fully advised or apprised of any violations. The Watermaster was also directed to keep the Court informed of any changes in ownership of water rights by reason of transfer by parties and to report on the compliance and violation by any party under the terms of the Judgment. This chapter presents these important requirements of the Court.

On April 26, 1968, the Watermaster contacted for the first time, the parties in ULARA who had acquired "Restricted Pumping" rights as well as those parties who were suspected of being active within ULARA. Information relative to the status and addresses of the parties was obtained from the State Water Resources Control Board, the Los Angeles County Flood Control District, the City of Los Angeles, and various other agencies. This initial contact by mail informed the parties that a Judgment had been signed in ULARA which restricted the use of ground water within ULARA. It mentioned the fact that parties having rights to extract ground water from the basins (San Fernando, Sylmar, and Verdugo Basins) were listed in the Judgment together with their respective allowable extractions (Restricted Pumping) per water year. They were further informed that the actual reduction and control of ground water extractions would not become effective until October 1, 1968.

The letter also requested information as to the current status of each party, whether it was active or inactive at the time. The parties that responded as being active were subsequently notified by letter dated May 15, 1969, that Watermaster representatives would like to meet with them to discuss the Judgment. Thus the Watermaster informed all parties, on a personal basis, of their responsibilities of the Watermaster in enforcing the Judgment.

Assignments of Restricted Pumping

The Watermaster is required to inform the Court of any transfers or assignments of "Restricted Pumping". During the 1968-69 water year, the City of Los Angeles submitted estimates on the amounts to be extracted by those parties having separate stipulated Judgments with the City of Los Angeles. The clause, which allows the parties with stipulated Judgments to extract ground water under the City of Los Angeles' "Restricted Pumping" right, is covered by Section V of Paragraph 2 of the Judgment. In addition, the City of San Fernando exercised its right to purchase water from the City of Los Angeles pursuant to the "Physical Solution - Sylmar Basin", which is described in Section VII, Paragraph 2 of the Judgment.

In other assignments, the City of San Fernando leased water rights from Kisag Moordigian in the Sylmar Basin. Table 8 lists all assignments, parties, and amounts involved. Appendix "A" records the documents used to assign "Restricted Pumping" rights between parties and shows the current ownership of "Restricted Pumping" rights by each of the parties as of September 30, 1969.

Please note the suggested sample copies of Water Use License Agreements and Sale of Water Rights which are included in Appendix A.

TABLE 8

ASSIGNMENTS OF RESTRICTED PUMPING

Party	:	Assignment and amount,	:	Party
	:	in acre-feet	:	

San Fernando BasinPursuant to Stipulated Judgments

California Materials Company	Stipulated	360 ^{a/}	from	Los Angeles, City of
Consolidated Rock Products Company	Stipulated	1,180 ^{a/}	from	Los Angeles, City of
Livingston-Graham, Inc.	Stipulated	270 ^{a/}	from	Los Angeles, City of
Sears, Roebuck and Company	Stipulated	100 ^{a/}	from	Los Angeles, City of
Walt Disney Productions	Stipulated	1,590 ^{a/}	from	Los Angeles, City of

Pursuant to Sale

Mena, John and Barbara	Successor to	0	from	Holmgrin, Neva Bartlett
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Sylmar BasinPursuant to Physical Solution

San Fernando, City of	Conveyed	300 ^{b/}	from	Los Angeles, City of
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Pursuant to License

San Fernando, City of	Licensed	40	from	Moordigian, Kisag
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Pursuant to Sale

Boise Cascade Building Company	Successor to	609	from	The Wellesley Company
Church of Jesus Christ of Latter Day Saints	Successor to	0	from	Stetson, Henry G.

^{a/} Estimate submitted by City of Los Angeles, see Appendix A.

^{b/} Estimate submitted by City of San Fernando.

In order that a water right license or sale agreement be in force during the water year, it will be the Watermaster's policy that it must have been signed before or during the water year in question. In addition, the license or sale document should be filed early with the Watermaster. Failure to submit a license or sale document by September 30 of the water year in question may be considered as evidence that such an agreement was never consummated during such water year.

Overextractions

In restricting ground water extractions in ULARA, it was foreseen that there would be unavoidable fluctuations in water usage occurring from year to year. Therefore, the flexibility clause was included in the Judgment which allowed each party to vary its extractions within reasonable limits so that it could pump more or less than its "Restricted Pumping", with equivalent debits or credits being applied to its extractions in subsequent water years. The flexibility provisions described in Section VIII of the Judgment, allows the parties a flexibility of 10 percent of its "Restricted Pumping" right. In other words, a party may underpump or overpump by ten percent of its Restricted Pumping and in the succeeding water year increase or decrease (whichever is applicable) its pumping by the same amount.

Those parties that overextracted, but still fell within the 10 percent limitation are listed in Table 9. Table 9 likewise summarizes all over-extractions and violations of the Judgment. Of the 15 parties that over-extracted within the San Fernando Basin, eight were in violation of the Judgment. In the Sylmar Basin, only one party violated the Judgment and that was by reason of having no "Restricted Pumping" right. The parties in violation are subject to court action.

Table 9 also lists those parties that are subject to the stipulated Judgment with the City of Los Angeles. These parties' extractions, in excess of the estimates submitted by the City of Los Angeles, will be adjusted against the City's "Restricted Pumping" right during the 1969-70 water year. As such, the parties in question are not considered to be in violation of the Judgment.

Determinations and Recommendations by the Watermaster

In the 1968-69 water year, the Watermaster was faced with two separate requests submitted by parties in ULARA which required a close review and determination for submission of recommendations to the Court. One emergency arose when the City of Los Angeles was faced with high water levels in their lower Van Norman Reservoir, threatening their construction project on the lower Van Norman Reservoir facilities. The City requested permission to lower the water level by releasing water from the reservoir and spreading it in the Tujunga Spreading Grounds. A copy of the letter requesting permission is shown in Appendix A. The other emergency arose when gasoline pollution was detected in Forest Lawn Memorial Park Association's Well No. 4. Forest Lawn requested that it not be held responsible or accountable for extractions from Well No. 4 while it was being utilized to prevent the further spreading of gasoline pollution and as long as it was producing contaminated water.

TABLE 9

OVEREXTRACTIONS
In acre-feet

Party	(1)		(2)		Overextraction		
	Allowable	Amount	(3)	(4)	b/	(5)	
	extraction	extracted	Amount	Allowable		In percent	
	1968-69 ^a		(1)-(2)=(3)			$\frac{(3)}{(4)} \times 100 = (5)$	
<u>San Fernando Basin</u>							
Burbank, City of	+13,649.00	-13,654.42	- 5.42	1,364.90		.04	
California Materials Co.	+ 360.00	- 399.57	- 39.57	-- c/			
Consolidated Rock Products Company	+ 1,180.00	- 1,499.57	- 319.57	-- c/		-- d/	
Harper, Cecilia DeMille	0.00	- 28.31	- 28.31	.00 c/			
Livingston-Graham, Inc.	+ 270.00	- 349.07	- 79.07	-- c/			
Mena, John and Barbara	0.00	- 0.96	- 0.96	.00		-- d/	
Monterita Lake Association	0.00	- 7.15	- 7.15	.00		-- d/	
Riverwood Ranch Mutual Water Company	0.00	- 7.24	- 7.24	.00		-- d/	
Sears, Roebuck and Co.	+ 100.00	- 228.96	- 128.96	-- c/			
Southern Service Co., Ltd.	0.00	- 93.82	- 93.82	.00		-- d/	
Sportsmen's Lodge, Inc.	0.00	- 110.04	- 110.04	.00		-- d/	
Toluca Lake Property Owners' Association	+ 23.00	- 30.40	- 7.40	2.30		32.17 ^d /	
Walt Disney Productions	+ 1,590.00	- 1,643.21	- 53.21	-- c/			
Wright, J. Marion and Alice M.	0.00	- 7.04	- 7.04	.00		-- d/	
<u>Sylmar Basin</u>							
Church of Jesus Christ of The Latter Day Saints	0.00	- 318.84	- 318.84	.00		-- d/	
<u>Verdugo Basin</u>							

a/ Refer to Column (3), Table 5.

b/ Computed as 10 percent of the "Restricted Pumping" unless otherwise noted.

c/ Party entitled to extract ground water per stipulated Judgment with City of Los Angeles. The City will, in succeeding water year, decrease its extractions by the amount of the overextraction shown under Column (3).

d/ Party in violation of the Judgment either as a result of having a zero water right or having exceeded its extractions by 10 percent of its "Restricted Pumping".

The submission of the above requests was considered in view of Section X, Paragraph 2(c) of the Judgment which reads in part, "The Watermaster shall make such recommendations as it deems appropriate in connection with the proper utilization of the water supply and the underground storage capacities of the ground water reservoirs in the ULARA". In both cases mentioned above, the Watermaster first reviewed the circumstances and physical conditions existing at that time, and then submitted pertinent information regarding the request to the Advisory Board. After discussing the matter with the Board, a final determination was made by the Watermaster.

With regard to the City of Los Angeles, the Watermaster was first informed by the City, by letter dated August 19, 1968, of the serious problems which it anticipated in its water operations during the late fall and winter of 1968. The City informed the Watermaster that it was reconstructing the lower Van Norman Reservoir and it was essential that the water level in the reservoir be maintained at a prescribed level. The City requested permission to transfer some of the reservoir water to ground water storage by means of its Tujunga spreading grounds.

The parties, as well as the Advisory Board, were notified by the Watermaster of this request. The parties approved the request and it was subsequently approved by the Court on January 20, 1969, when it signed the "Stipulation Re Spreading of Water by Plaintiff and Order". A copy of the document is shown in Appendix A.

The stipulation allowed the City to spread 5,000 acre-feet of water during the critical construction period. The City was allowed to spread and agreed to spread water only if no other means along the reservoir, such as consumer use, was available. During the interim (prior to the Court's signing of the stipulation) weather conditions were such that the City was required to spread water in order to lower threatening high water levels. The Watermaster was informed of the City's intention and agreed to allow the spreading as long as the Watermaster was present. Thus, all spreading operations were monitored at Tujunga spreading grounds located near Sheldon Street and North Hollywood Freeway (see Plate 2). A summary of the spreading operations monitored by the Watermaster is as follows:

Spreading Operations No. 1

October 5, 1968 through October 17, 1968	13 days	805 acre-feet
Amounts spread		
Water level dropped in lower Van Norman Reservoir	8.9 feet	

Spreading Operations No. 2

February 3, 1969 through February 17, 1969	15 days	1,652 acre-feet
Amounts spread		
Water level dropped in lower Van Norman Reservoir	5.0 feet	

Spreading Operations No. 3

February 25, 1969 through March 7, 1969	11 days	1,220 acre-feet
Amounts spread		
Water level dropped in lower		
Van Norman Reservoir	2.0 feet	<hr/>
Total Amount spread		3,677 acre-feet

The other determination made by the Watermaster involved the occurrence of gasoline pollution at Forest Lawn Well No. 4. A study was made of the gasoline pollution problem, after which the Watermaster informed the parties and the Advisory Board. Having considered all aspects and comments, the Watermaster arrived at the following recommendation. It is recommended that the Court allow ground water extractions from Well No. 4 for the express purpose of alleviating a serious ground water contamination problem. It is further recommended that extractions from Well No. 4 be considered non-beneficial so long as the water produced continued to be contaminated and that Forest Lawn Memorial Park Association not be held accountable for these ground water extractions. The Watermaster's action and recommendations were approved by the Advisory Board. Further details on the operation are described in Chapter II of this report.

If and when the water quality from Well No. 4 improves so that it might be used for beneficial purposes, the Watermaster will then commence charging this water use to Forest Lawn Memorial Park Association. It is the Watermaster's intention to monitor the pollution problem and the methods used for containing and alleviating the contamination.

The Upper Los Angeles River Area was established as a "Watermaster Service Area" in accordance with Part 4, Division 2, of the Water Code of the State of California. Pursuant to the provisions of Section 4201 thereof, the cost of watermaster service is payable one-half by the State and one-half by the parties. Thus, the parties are assisted by the State in their endeavor to distribute the waters of ULARA in the most economical way.

The Judgment, on the other hand, describes the procedures for apportioning the costs among the parties and how it should be collected. It requires that each year, the Watermaster prepare a proposed budget covering the forthcoming July 1 to June 30 fiscal year. Please keep in mind that watermaster service and the annual report are on a water year basis, i.e., October 1 through September 30. The Judgment also provides that the parties' share of the budget be borne by each party in the proportion that its "Mutual Prescriptive Right" bears to the total "Mutual Prescriptive Right" of all parties in ULARA. However, no party having 50 acre-feet or less of "Mutual Prescriptive Right" shall be assessed any charges.

The Watermaster is required to include the proposed budget in its annual report, so that both may be reviewed and approved by the Advisory Board on or about February 1 of each year. The proposed budget is subsequently mailed to the parties as part of the annual report on or before March 1 of each year. If there are any objections to the proposed budget, they must be presented in writing to the Court and to the Watermaster within 30 days (on or before March 31) after the mailing of the annual report. If no objections are received, the proposed budget becomes final. All payments must be received, whether objections are filed or not, within 60 days (on or before May 1) after mailing of the annual report.

Cost of Watermaster Service for 1968-69

The tentative budget for the first year of watermaster service (1968-69) was reviewed and approved by the Advisory Board in a meeting held on August 28, 1968. The tentative budget was subsequently mailed to the parties on August 30, 1968. The tentative budget shown on Table 10 received no objections and it was adopted as the final budget on September 16, 1968.

TABLE 10
APPROVED BUDGET FOR 1968-69

Salaries and wages	\$11,919	
Operating expenses	<u>8,133</u>	
 TOTAL BUDGET		 \$20,052
 Billing amount necessary for fiscal year July 1, 1968 through June 30, 1969		 \$20,052
 One-half payable by State		 \$10,026
One-half payable by parties to Judgment		\$10,026

The administrative cost of \$10,026 chargeable to the parties was apportioned among the parties as directed by the Judgment. Each party's share of the budget for the water year 1968-69 is set forth in Table 11. All payments were received on time, prior to September 30, 1968.

Income and expenditures for watermaster service during the 1968-69 water year are shown in Table 12. In accordance with the California Water Code, any credit or debit balance remaining at the end of the fiscal year is carried forward into the succeeding water year. The parties' share of the carryover into the 1969-70 water year totaled \$4,302.79.

During the first year of watermaster service it was anticipated that considerable work would be accomplished; however, due to lack of personnel, much of the work was not completed and was delayed to the 1969-70 fiscal year. In addition, an annual report was not prepared during the first fiscal year of work. However, the second fiscal year of watermaster service should see an increase in the costs due to the increased work load required of the Watermaster.

TABLE 11

APPORTIONMENT OF PARTIES' SHARE
OF 1968-69 BUDGET

Party	: Mutually Prescriptive : Right, in acre-feet	: Apportionment : to be paid
<u>San Fernando Basin</u>		
Burbank, City of	17,760	\$ 1,396
Forest Lawn Memorial Park Association	1,060	83
Glendale, City of	16,141	1,269
Lockheed Aircraft Corp.	310	24
Los Angeles, City of	82,310	6,468
Valhalla Memorial Park	240	19
Van de Kamp's Holland Dutch Bakers, Inc.	120	9
<u>Verdugo Basin</u>		
Crescenta Valley County Water District	1,988	156
Glendale, City of	2,327	183
<u>Sylmar Basin</u>		
Los Angeles, City of	2,440	192
San Fernando, City of	2,370	186
Wellesley Company, The*	527	41
TOTALS	127,593	\$ 10,026
<u>Recapitulation for:</u>		
Glendale, City of	18,468	\$ 1,452
Los Angeles, City of	84,750	\$ 6,660

*Now known as Boise Cascade Building Company.

TABLE 12

STATEMENT OF 1968-69 INCOME AND EXPENDITURES

Item	:	Parties	:	State	:	State and Parties
<u>Income</u>						
From 1968-69 budget		\$10,026.00		\$10,026.00		\$20,052.00
<u>Expenditures</u>						
Salaries and wages		\$ 4,584.60		\$ 4,584.62		\$ 9,169.22
Operating expenses						
Miscellaneous indirect costs ^{a/}		\$ 1,034.56		\$ 1,034.61		\$ 2,069.17
Travel in State		34.59		34.62		69.21
Electronic machine computing		69.46		69.48		138.94
TOTAL EXPENDITURES		<u>\$ 5,723.21</u>		<u>\$ 5,723.33</u>		<u>\$11,446.54</u>
BALANCE		<u>\$ 4,302.79^{b/}</u>		<u>\$ 4,302.67</u>		<u>\$ 8,605.46</u>

a/ Rent, utilities, auto rental, janitorial services, communications rental, retirement, employees' health plan, and workman's compensation insurance.

b/ Subject to delayed charges and adjustments.

Approved Budget for 1969-70

The tentative budget for 1969-70 was reviewed and approved by the Advisory Board at a meeting held on February 3, 1969. This second budget, like the first budget prepared for watermaster service, was submitted to the Advisory Board and to the parties separately as a separate item and not as a part of an annual report. The budget mailed to the parties on March 1, 1969, received no objections and, by reason thereof, became final on April 1, 1969. Table 13 presents the 1969-70 approved budget. The apportionment of the budget is shown on Table 14. All payments were made within the specified time limit.

TABLE 13

APPROVED BUDGET FOR 1969-70

Salaries and wages	\$16,021	
Operating expenses	<u>9,410</u>	
TOTAL BUDGET		\$25,431
Billing amount necessary for fiscal year		
July 1, 1969 through June 30, 1970		\$25,431
One-half payable by State		\$12,716
One-half payable by parties to Judgment		\$12,715

TABLE 14

APPORTIONMENT OF PARTIES' SHARE OF 1969-70 BUDGET

Party	: Mutually Prescriptive : Apportionment	
	: Right, in acre-feet	: to be paid
<u>San Fernando Basin</u>		
Burbank, City of	17,760	\$ 1,770
Forest Lawn Memorial Park Association	1,060	106
Glendale, City of	16,141	1,608
Lockheed Aircraft Corporation	310	31
Los Angeles, City of	82,310	8,202
Valhalla Memorial Park	240	24
Van de Kamp's Holland Dutch Bakers, Inc.	120	12
<u>Verdugo Basin</u>		
Crescenta Valley County Water District	1,988	198
Glendale, City of	2,327	232
<u>Sylmar Basin</u>		
Los Angeles, City of	2,440	243
San Fernando, City of	2,370	236
Watt, R. A. Company, Inc.*	527	53
TOTALS	127,593	\$ 12,715
<u>Recapitulation for:</u>		
Glendale, City of	18,468	\$ 1,840
Los Angeles, City of	84,750	\$ 8,445

*Now known as Boise Cascade Building Company

TENTATIVE BUDGET FOR 1970-71

In accordance with the Judgment, the Watermaster hereby submits a proposed budget for the fiscal year July 1, 1970 through June 30, 1971. The tentative budget submitted herewith was reviewed and approved by the Advisory Board on February 2, 1970. The parties will have 30 days after the mailing of the annual report for submitting their objections to the proposed budget. If no objections are received by March 31, 1970, the budget will become final. Invoices for each party's proportionate share of the budget will be mailed on or about April 1 and payments will be due on or before May 1, 1970. Table 15 presents the 1970-71 budget as approved by the Advisory Board. Each party's share of the 1970-71 budget is shown in Table 16.

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Southern District

TABLE 15

TENTATIVE BUDGET FOR THE FISCAL YEAR JULY 1, 1970
THROUGH JUNE 30, 1971

Salaries and wages	\$16,532
Operating expenses	<u>8,644</u>
TOTAL BUDGET	\$25,176
One-half payable by State	\$12,588
One-half payable by parties to Judgment	\$12,588
Less estimated funds on hand July 1, 1970	<u>- 3,000</u>
Amount to be billed	\$ 9,588

JJ Doody

James J. Doody
District Engineer
Southern District
and Watermaster

Approved: Date: 7/2/71

UPPER LOS ANGELES RIVER AREA
ADVISORY BOARD

By

C. M. Thompson

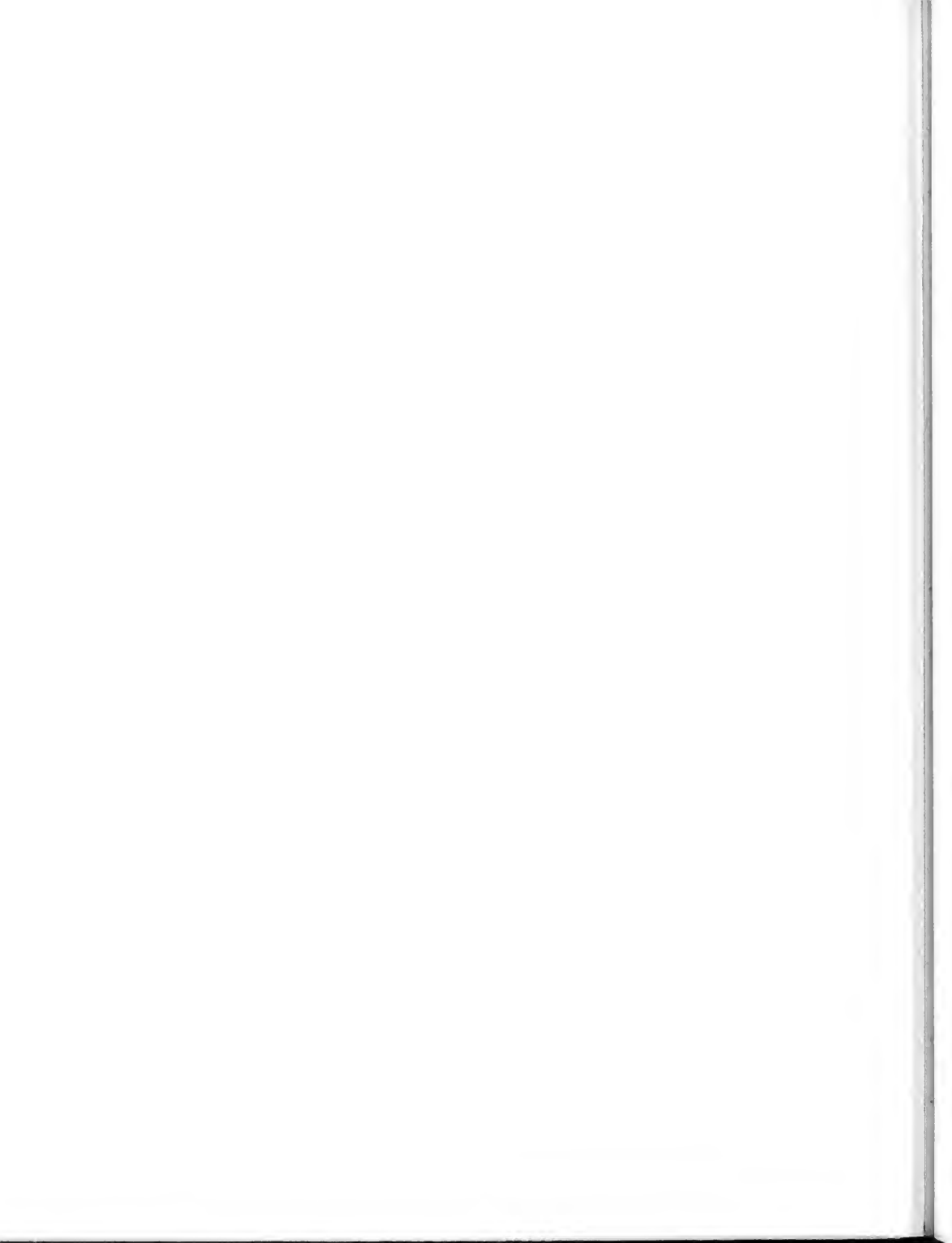
Chairman

TABLE 16

APPORTIONMENT OF PARTIES' SHARE OF 1970-71 BUDGET

Party	: Mutually Prescriptive : : Right, in acre-feet :	Apportionment to be paid
<u>San Fernando Basin</u>		
Burbank, City of	17,760	\$1,335
Forest Lawn Memorial Park Association	1,060	80
Glendale, City of	16,141	1,213
Lockheed Aircraft Corporation	310	23
Los Angeles, City of	82,310	6,185
Valhalla Memorial Park	240	18
Van de Kamp's Holland Dutch Bakers, Inc.	120	9
<u>Verdugo Basin</u>		
Crescenta Valley County Water District	1,988	149
Glendale, City of	2,327	175
<u>Sylmar Basin</u>		
Los Angeles, City of	2,440	183
San Fernando, City of	2,370	178
Watt, R. A. Company, Inc.*	527	40
TOTALS	127,593	\$9,588
<u>Recapitulation for:</u>		
Glendale, City of	18,468	\$1,388
Los Angeles, City of	84,750	\$6,368

*Now known as Boise Cascade Building Company



APPENDIX A

RESTRICTED PUMPING OF
UPPER LOS ANGELES RIVER AREA PARTIES
SEPTEMBER 1969

AND

COPIES OF LEGAL DOCUMENTS

APPENDIX A

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**RESTRICTED PUMPING OF
UPPER LOS ANGELES RIVER AREA PARTIES
SEPTEMBER 1969**

<u>Party ^{a/}</u>	<u>Restricted Pumping, in acre-feet per year</u>
SAN FERNANDO BASIN	
Bartholomaus, William O. and Ellen S. Dubois	15.00
Burbank, City of	13,649.00
California Materials Company	0.00 ^{b/}
Consolidated Rock Products Company	0.00 ^{b/}
Forest Lawn Memorial Park Association Includes: American Security and Fidelity Company Forest Lawn Cemetery Association Forest Lawn Company	814.00
Glendale, City of	12,405.00
Harper, Cecilia DeMille Successor of Estate of Cecil B. DeMille	0.00
Livingston-Graham, Incorporated Successor of Livingston Rock and Gravel Company	0.00 ^{b/}
Lockheed Aircraft Corporation	239.00
Los Angeles, City of	63,257.00
McCabe, Celeste Louise	1.00
Mena, John and Barbara Successor of Neva Bartlett Holmgren	0.00
Monteria Lake Association	0.00
Riverwood Ranch Mutual Water Company	0.00
Sears, Roebuck & Company	0.00 ^{b/}
Southern Service Company, Limited	0.00
Sportsmen's Lodge, Incorporated Formerly known as Sportsmen's Lodge Banquet Corporation	0.00
Toluca Lake Property Owners' Association	23.00
Valhalla Memorial Park Includes: Valhalla Mausoleum Park Valhalla Properties	184.00
Van de Kamp's Holland Dutch Bakers, Incorporated	93.00
Walt Disney Productions	0.00 ^{b/}
Wright, Marion J. and Alice M.	0.00
SUBTOTALS (SAN FERNANDO BASIN)	90,680.00

**RESTRICTED PUMPING OF
UPPER LOS ANGELES RIVER AREA PARTIES
SEPTEMBER 1969**

(Continued)

<u>Party ^{a/}</u>	<u>Restricted Pumping, in acre-feet per year</u>
<u>SYLMAR BASIN</u>	
Boise Cascade Building Company Successor of The Wellesley Company Successor of Maxine Duckworth and John E. Mullin	609.00
Brown, Charles T. Successor of Stella M. Brown	0.00
Church of Jesus Christ of the Latter-Day-Saints Successor of Henry G. Stetson	0.00
Los Angeles, City of	2,818.00
Moordigian, Kisag	46.00
San Fernando, City of	<u>2,737.00</u>
SUBTOTALS (SYLMAR BASIN)	6,210.00
<u>VERDUGO BASIN</u>	
Crescenta Valley County Water District	3,294.00
Glendale, City of	<u>3,856.00</u>
SUBTOTALS (VERDUGO BASIN)	<u>7,150.00</u>
TOTAL (ULARA)	104,040.00

^{a/} Parties that are not listed on this table have a zero water right or "Restricted Pumping."

^{b/} Party is allowed to extract ground water pursuant to Stipulated Judgment with City of Los Angeles.



SAM VORTY
MAYOR

DEPARTMENT
OF
WATER AND POWER
THE CITY OF LOS ANGELES

COMMISSION
JOHN W. LUNNING, PRESIDENT
HENRY G. BOORIN
NATHAN O. FREEDMAN
J. STANLEY MULLIN
FRANK R. PALMIERI
MARY J. BORN, SECRETARY

WATER AND POWER SQUARE
111 NORTH HOPE STREET - P. O. BOX 111
LOS ANGELES, CALIFORNIA 90054

TELEPHONE (213) 461-4211
CABLE ADDRESS: DEWAPOLA

ROBERT L. KAHOUSE
GENERAL MANAGER
AND CHIEF ENGINEER

JOHN D. COWAN
ASSISTANT GENERAL MANAGER
AND CHIEF ENGINEER

FLOYD L. GORE
CHIEF ELECTRICAL ENGINEER
AND ASSISTANT MANAGER

ROBERT V. PHILLIPS
CHIEF ENGINEER OF
WATER WORKS AND
ASSISTANT MANAGER

WILLIAM O. SACHAU
CHIEF FINANCIAL OFFICER

May 5, 1969

Mr. James J. Doody
District Engineer and Watermaster
State of California
Department of Water Resources
P. O. Box 6598
Los Angeles, California 90055

Dear Mr. Doody:

Stipulated Judgments and Physical
Solution Under the Trial Court
Judgment - Estimated Values for
1968-69

In accordance with Section IV of the "Policies and Procedures"
for the Watermaster Service in the Upper Los Angeles River Area, follow-
ing is a status report for the San Fernando and Sylmar subareas.


San Fernando Subarea

The "Restricted Pumping Right" of the City of Los Angeles in
the San Fernando Subarea, under the Trial Court Judgment, is 63,257
acre-feet per year. The total estimated pumpage by the Stipulating
Parties for the year 1968-69 is 3,500 acre-feet. Thus, the amount avail-
able for pumping by the City of Los Angeles is 59,757 acre-feet (63,257
minus 3,500).

Sylmar Subarea

The "Restricted Pumping Right" of the City of Los Angeles in
the Sylmar Subarea, under the Trial Court Judgment, is 2,818 acre-feet
per year. The City of San Fernando has indicated to the Department by
letter (R. E. James to M. L. Blevins dated February 26, 1969), that
they will require approximately 300 acre-feet of water for the water
year 1968-69. Thus, the amount available for pumping by the City of
Los Angeles is 2,518 acre-feet (2,818 minus 300).

Very truly yours,


ROBERT V. PHILLIPS
Chief Engineer of Water Works
and Assistant Manager

WATER RIGHT LEASE

KISAG MOORDIGIAN, hereinafter referred to as Lessor or Licensor, hereby grants to the CITY OF SAN FERNANDO, a municipal corporation, hereinafter referred to as Lessee or Licensee, the right and license to extract ~~forty (40)~~ ^{thirty five (35)} acre-feet of water of Licensor's Mutually Prescriptive Water Right (40 acre-feet of Licensor's Restricted Pumping Water Right), being ~~part~~ ^{part} of Lessor's adjudicated water rights, allocated to Licensor (or predecessors in interest) under and pursuant to Judgment dated March 14, 1968 and entered in Los Angeles' Superior Court Case No. 650,079, entitled "The City of Los Angeles, Plaintiff vs. City of San Fernando, et al., Defendants", during the period commencing June 1, 1969 and continuing to and including September 30, 1974.

Said right and license are granted subject to the following conditions:

- (1) Licensee shall exercise said right and license to said waters and take, divert, and extract the same for and on behalf of KISAG MOORDIGIAN during the period above specified and put the same to beneficial use, and Licensee shall not by the exercise hereunder of said right and license acquire any right to extract water independent of the rights of Licensor.
- (2) Licensee shall notify the Watermaster that said pumping was done pursuant to this license and provide the Watermaster with a copy of the document.
- (3) Licensee shall note, in any recording of water production for the period of agreement, that said pumping was done pursuant to this license.

KISAG MOORDIGIAN warrants that he is the owner and has the right to annually take, divert, and extract each water year water in the quantity of ~~forty (40)~~ ^{thirty five (35)} acre-feet of Mutually Prescriptive Water Right (40 acre-feet of Restricted Pumping Water Right) ^{hereby transferred to Licensee} and that he has not pumped and will not pump or permit or license any other person to pump

EXHIBIT "A"

revised thirty five (35) acres
any part of his total 40-acre Prescriptive Right (40 acre-foot

Restricted Pumping) during the period of June 1, 1969 through

September 30, 1974, or any extension of said term. *Leiman, hereby renounces
his part Prescriptive Right and does not Restricted Pumping right,*
as amended by court in said judgment to licensees.
dated May 24 1969

Dean Peters Moordigian
Kisag Moordigian
KISAG MOORDIGIAN
Licensor

CITY OF SAN FERNANDO
A Municipal Corporation

By *Philip F. Jones*
MAYOR
Licensee

ATTEST:

Leila Edwards
CITY CLERK OF THE CITY
OF SAN FERNANDO

TO 447 C
(Individual)

STATE OF CALIFORNIA }
COUNTY OF Los Angeles } SS.

On June 23, 1969 before me, the undersigned, a Notary Public in and for said
State, personally appeared Kisag Moordigian and Dean Peters Moordigian

known to me

to be the person s whose names are subscribed
to the within instrument and acknowledged that they
executed the same.

WITNESS my hand and official seal.

Signature *Wm. Howard Nicholas*

Wm. Howard Nicholas

Name (Typed or Printed)

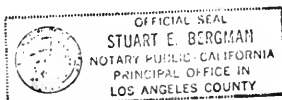


(This area for official notarial seal)

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES } SS

On this 3rd day of September, 1969, before me, Stuart E.
Bergman, a Notary Public in and for the County of Los Angeles, State of
California, personally appeared Philip F. Jones and Leila Edwards, known
to me to be the Mayor and City Clerk, respectively, of the municipal corpora-
tion that executed the within instrument and acknowledged to me that they
executed the same on behalf of such municipal corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official
seal the day and year in this certificate first above written.



Stuart E. Bergman
Notary Public in and for the County
of Los Angeles, State of California.

My commission expires Feb. 8, 1971

WATER USE LICENSE AGREEMENT

JOHN DOE hereby grants to BILL SMITH: a license to extract _____ acre-feet of licensor's Restricted Pumping allocated to licensor (or predecessors in interest) under and pursuant to Judgment dated March 14, 1968, and entered in Los Angeles Superior Court Case No. 650,079 entitled "The City of Los Angeles, Plaintiff vs. City of San Fernando, et al., Defendants", during the period commencing October 1, 19__ and continuing to and including September 30, 19__.

Said License is granted, subject to the following conditions:

- (1) Licensee shall exercise said right and extract the same on behalf of JOHN DOE during the period above specified and put the same to beneficial use and licensee shall not by the exercise hereunder of said right acquire any right to extract water independent of the rights of licensor.
- (2) Licensee shall notify the Watermaster that said pumping was done pursuant to this license and provide the Watermaster with a copy of the document.
- (3) Licensee shall note, in any recording of water production for the period of agreement, that said pumping was done pursuant to this license.

JOHN DOE warrants that he has _____ acre-feet of Restricted Pumping and that he has not pumped and will not pump or permit or license any other person to pump any part of said _____ acre-feet during period of October 1, 19__ through September 30, 19__.

DATED: _____

JOHN DOE

BILL SMITH

By _____

By _____

Title _____

Title _____

DEED OF WATER RIGHTS

For a valuable consideration, BILL SMITH hereby sells and transfers to the JOHN DOE COMPANY:

The Right to extract _____ acre-feet of grantor's Mutually Prescriptive Right (_____ acre-feet of Restricted Pumping) allocated to grantor (or predecessors in interest) under and pursuant to Judgment dated March 14, 1968, and entered in Los Angeles Superior Court Case No. 650,079 entitled "The City of Los Angeles, Plaintiff vs. City of San Fernando, et al., Defendants".

DATED: _____

JOHN DOE COMPANY

BILL SMITH

By _____

By _____

Title _____

Title _____



SAM YORTY
MAYOR

DEPARTMENT
OF
WATER AND POWER
THE CITY OF LOS ANGELES

COMMISSION
NATHAN O. FREEDMAN, PRESIDENT
HENRY G. BODKIN
JOHN W. LUHRING
J. STANLEY MULLIN
FRANK R. PALMIERI
OPAL L. MURPHY, SECRETARY

WATER AND POWER SQUARE
111 NORTH HOPE STREET • P. O. BOX 111
LOS ANGELES, CALIFORNIA 90054

TELEPHONE (213) 481-4211
CABLE ADDRESS OEWAPOLA

EDGAR L. KANOUSE
GENERAL MANAGER
AND CHIEF ENGINEER

JOHN G. COWAN
ASSISTANT GENERAL MANAGER
AND CHIEF ENGINEER

FLOYD L. GOSS
CHIEF ELECTRICAL ENGINEER
AND ASSISTANT MANAGER

ROBERT V. PHILLIPS
CHIEF ENGINEER OF
WATER WORKS AND
ASSISTANT MANAGER

WILLIAM D. SACHAU
CHIEF FINANCIAL OFFICER

August 19, 1968

Mr. James J. Doody
District Engineer and Watermaster
State of California
Department of Water Resources
P. O. Box 6598
Los Angeles, California 90055

Dear Mr. Doody:

City of Los Angeles Vs.
City of San Fernando, et al
Superior Court Case 650079

In the judgment in the above-named action, the Department of Water Resources, Southern District, of the State of California, was appointed as Watermaster in the case and this letter is directed to you in that capacity.

The purpose of writing you at this time is to make you familiar with a serious problem which we anticipate in our water operations during the late fall and winter of 1968 and to allow adequate time for your appraisal, notification of parties, and recommendations to the court.

The Water System of the City of Los Angeles, in programming the reconstruction of the Lower San Fernando Dam of the Lower Van Norman Reservoir, plans to do some vital preliminary work beginning on or about November 15 this year. As you are undoubtedly aware, Lower Van Norman Reservoir is the terminal reservoir for the Los Angeles-Owens River Aqueduct systems and nearly all of the aqueduct water received from that source is dispensed from this reservoir. In said planned operation of reconstruction, it is required that the level of the reservoir be lowered to elevation 1085 by November 15, 1968. This is 40 feet below its present high water operating level and more than 30 feet below our normal minimum operating level. Consequently, the operation to keep

August 19, 1968

the reservoir in service and our customers supplied will require some very careful planning and operating procedures. Fluctuations in demand created by extremes in weather conditions could cause a sudden rise in water level at that low storage point which must be controlled or have our construction work seriously interrupted.

While we are planning to have storage available in our distribution reservoirs and will anticipate transferring water within our capability at the reduced head, it may be necessary to transfer some of the water to ground storage through the Tujunga Spreading Grounds. This may be accomplished by diverting from the City Trunk Line and the Sheldon Street Trunk Line to the Tujunga spreading basins or by discharging water from the Stonehurst line into the concrete channel of the Tujunga Wash and diverting into the spreading grounds at the rubber dam and diversion works just southwesterly of Laurel Canyon Boulevard.

It may be possible under certain conditions of supply and demand to operate through this critical period between November 1, and December 31, 1968, without using the groundwater storage available. But in the event it is necessary, and in order to avoid waste of this water, we would propose to utilize this groundwater storage capacity to the extent of approximately 3,200 acre feet. We request your recommendation that such operation would constitute proper utilization of the water supply and the underground storage capacity of the Upper Los Angeles River area. It is our intent, in the event such recommendation by you is made, to recover from said ground storage, through our Vanowen Wells, an equal amount of water within the 1968-69 water year. We also request that the parties be notified and the approval of the Court be obtained for such operation to the extent of adding a maximum of 3,200 acre-feet of water to ground storage through the Tujunga Spreading Grounds and later to recapture the same.

Should you require greater detail we will be happy to provide you with any and all records which you may find pertinent.

Very truly yours,



ROBERT V. PHILLIPS
Chief Engineer of Water Works
and Assistant Manager

1 ROGER ARNBERGH, City Attorney
2 GILMORE TILLMAN, Chief Assistant
3 City Attorney for Water and Power
4 ROBT. E. MOORE, JR., Assistant City Attorney
5 RALPH GUY WESSON, Assistant City Attorney
6 111 North Hope Street
7 Los Angeles, California 90054
8 Telephone: 481-6362
9 Attorneys for Plaintiff
10 City of Los Angeles

ORIGINAL FILED

JAN 24 1969

WILLIAM G. SHAFF County Clerk
By _____ Deputy

11 NEVILLE R. LEWIS, City Attorney
12 LEWIS, VARNI & CHERANDELLI
13 Special Counsel
14 501 South Brand Boulevard
15 San Fernando, California
16 Telephone: 361-1121
17 Attorneys for Defendant
18 City of San Fernando

19 JOSEPH W. RAINVILLE, City Attorney
20 City of Glendale
21 SAMUEL CORLICK, City Attorney
22 City of Burbank
23 HIGGS, JENNINGS, FLETCHER & MACK
24 Special Counsel
25 707 Broadway
26 San Diego, California 92112
27 Telephone: 234-6501
28 Attorneys for Defendants
29 City of Glendale and City of Burbank

RECEIVED
FIDELITY & SECURITY

JAN 24 1969

RECEIVED
BY _____

30 MELBY, CRICKARD & ANDERSON
31 Suite 306 - Fidelity Building
32 223 East Broadway
33 Glendale, California 91205
34 Telephone: 246-5644
35 Attorneys for Defendant
36 Crescenta Valley County Water District

RECEIVED
LEGAL DIVISION
DEPT. OF WATER & POWER
CITY OF LOS ANGELES

JAN 29 1969

AM PM
7/8/9/10/11/12/1/2/3/4/5/6

37 WM. HOWARD NICHOLAS
38 2600 Wilshire Boulevard
39 Los Angeles, California 90057
40 Telephone: 368-6131
41 Attorney for Defendants
42 Lockheed Aircraft Corporation,
43 Forest Lawn Cemetery Association, et al.

44 SUPERIOR COURT OF THE STATE OF CALIFORNIA
45 FOR THE COUNTY OF LOS ANGELES

46 THE CITY OF LOS ANGELES, a)
47 Municipal Corporation,)
48)
49 Plaintiff,)
50 vs.)
51)
52 CITY OF SAN FERNANDO, a)
53 Municipal Corporation, et al.,)
54)
55 Defendants.)

NO. 650079
STIPULATION RE SPREADING
OF WATER BY PLAINTIFF
AND
ORDER

1 IT IS HEREBY STIPULATED by and between the parties hereto,
2 through their attorneys of record:

3 1. That plaintiff has represented that on October 5,
4 1968, an emergency situation arose by reason of certain construction
5 work by plaintiff and a change in weather conditions which pre-
6 vented the proper lowering of the water levels of the Lower Van
7 Norman Reservoir sufficient to permit the commencement of the
8 construction of a cofferdam at said reservoir which required it to
9 commence the spreading of Owens River water in its Tujunga
10 Spreading Grounds in order to prevent its waste by disposing of it
11 in the Los Angeles River Channel and that it is still engaged in
12 construction work which may cause similar conditions to arise in
13 the future.

14 2. That plaintiff notified the Watermaster herein on
15 August 19, 1968 that such an emergency might arise and thereafter
16 informal conferences were held among plaintiff and some of the
17 defendants whereby it was concluded that no adverse affect on
18 water table conditions would be expected to occur if such spreading
19 were to become necessary.

20 3. That Paragraph IX of the judgment entered herein on
21 March 15, 1968 enjoins any party "from engaging in any artificial
22 recharge by the spreading of water on the surface of the ground for
23 the purpose of causing it to percolate into the ground water basins
24 within the U.L.A.P.A., except pursuant to terms and conditions as
25 fixed by the court upon application to the court after notice to
26 all parties and the Watermaster and the conclusion of hearings held
27 in connection therewith."

28 4. That said judgment is presently being appealed by
29 plaintiff herein.

30 5. That the parties desire to cooperate to avoid the
31 wasting of water and to provide for the emergency spreading of
32 Owens River water by plaintiff during the pendency of the appeal so

1 long as the respective rights, claims and contentions of each party
2 are not prejudiced thereby.

3 NOW, THEREFORE, IT IS HEREBY FURTHER STIPULATED by and
4 between the parties:

5 6. That during the period it is necessary to maintain
6 the water levels of the Lower Van Norman Reservoir at lower than
7 normal levels for the purpose of construction, the City of Los
8 Angeles may spread Owens River water on the surface of the ground
9 in its Tujunga Spreading Grounds, for the purpose of causing it to
10 percolate into the San Fernando Basin of the U.J.A.R.A.

11 7. That accurate records shall be maintained of the time
12 and amount of such water spread by the City of Los Angeles in its
13 Tujunga Spreading Grounds, and that the information shall be
14 furnished to the Watermaster.

15 8. That the City of Los Angeles shall keep the Watermaster
16 advised of its plans, operations and spreading programs, and shall
17 cooperate with the Watermaster in providing such information and
18 records as the Watermaster may require.

19 9. That nothing contained in this stipulation shall be
20 deemed to affect or prejudice in any way any right, claim or
21 contention that any party may have herein.

22 10. That the total amount to be so spread, including
23 Owens River water spread since October 5, 1968 and prior to the
24 execution of this stipulation, shall be deemed to have no adverse
25 affect on the water table conditions in the San Fernando Basin
26 between the parties hereto, but defendants shall not be responsible to
27 any third parties for any legal damages sustained and that such
28 spreading shall not exceed 5,000 acre feet without plaintiff first
29 receiving court approval thereof pursuant to paragraph IX of said
30 judgment.

31 11. That this stipulation shall be effective upon sub-
32 mission to and approval by the court and shall be subject to

1 further order of the court herein.

2 Dated: January 14, 1969

3 ROGER ARNERBIGH, City Attorney
4 GILFORD GILFMAN, Chief Assistant
City Attorney for Water and Power
5 ROBT. E. MOORE, JR., Assistant City Attorney
RALPH CUY WISSON, Assistant City Attorney

6 By: Ralph Cuy Wisson
7 RALPH CUY WISSON
Attorneys for Plaintiff

8 NEVILLE R. LEWIS, City Attorney
9 LEWIS, VARNI & CHIRARDELLI, Special Counsel

10 By: Neville R. Lewis
11 NEVILLE R. LEWIS
Attorneys for Defendant
City of San Fernando

12 JOSEPH W. RAINVILLE, City Attorney
City of Glendale
13 SAMUEL GORLICK, City Attorney
City of Burbank
14 HIGGS, JENNINGS, FLETCHER & MACK
Special Counsel

15 By: Paul E. Engstrom
16 PAUL E. ENGSTROM
17 Attorneys for Defendants
City of Glendale and City of Burbank

18 MELBY, CRICARD & ANDERSON
19 By: Benny Melby
20 BENNY MELBY
Attorneys for Defendant
21 Crescenta Valley County Water District

22 Wm. Howard Nicholas
23 WM. HOWARD NICHOLAS
24 Attorneys for Defendants
Lockheed Aircraft Corporation, et al.

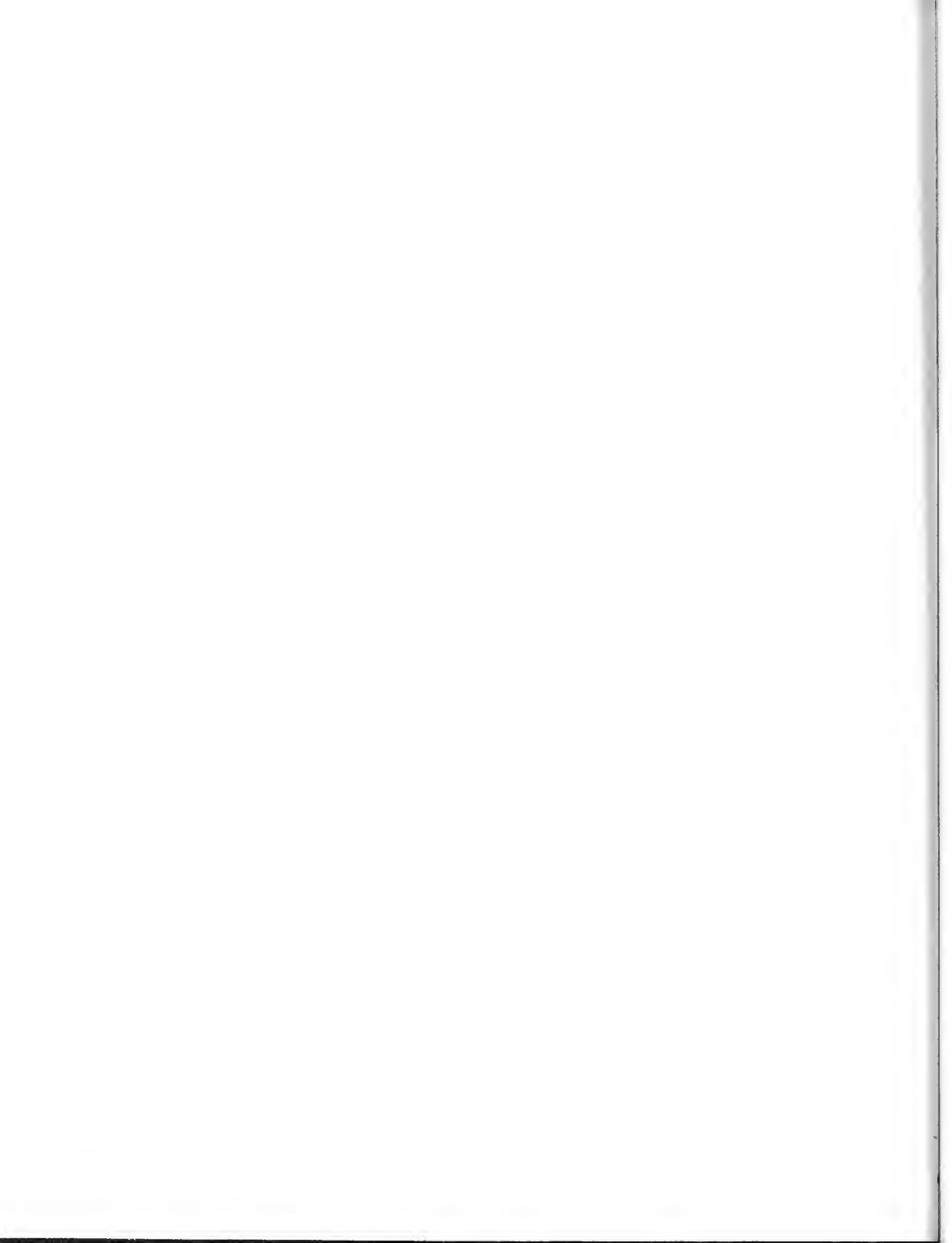
25 ORDER

26 Pursuant to said stipulation and for good cause thus shown,

27 IT IS SO ORDERED, subject to the retained jurisdiction
28 of the court to modify the same.

29 Dated: 20 January 1969

30
31 Edmund M. Moor
32 Judge of the Superior Court
Edmund M. Moor



APPENDIX B

GROUND WATER EXTRACTION

TABLE H-1
GROUND WATER EXTRACTIIONS
IN ACRE-FEET

		PRODUCTION															
STATE	OWNERS	1968					1969									TOTAL	
WELL	DESIGNATION	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT				
NUMBER	NATION																
SAN FERNANDO BASIN																	
HURBANK, CITY OF																	
IN/14W-09A035	14A	257.93	221.03	58.29	40.96	65.36	55.39	192.06	151.88	127.86	763.24	303.65	286.41	2024.06			
IN/14W-09B045	17	35.68	44.97	40.37	88.75	29.91	33.65	116.75	21.54	57.96	45.57	57.27	118.37	740.79			
IN/14W-09B025	12	100.04	64.10	56.14	141.15	55.15	142.43	84.92	78.84	99.59	182.93	144.93	116.89	1275.71			
IN/14W-09G035	9	81.02	28.81	25.02	44.06	19.11	89.47	144.03	96.16	77.39	197.21	198.52	74.51	1075.31			
IN/14W-09H015	10	60.64	36.52	99.50	22.23	127.14	39.82	107.36	107.27	147.24	149.74	152.06	89.57	1139.09			
IN/14W-09H045	11A	110.41	11.58	55.03	40.58	9.92	31.94	0.00	136.05	120.76	161.36	164.92	189.61	1042.18			
IN/14W-09K025	13A	0.00	0.00	0.00	0.00	126.81	167.30	102.54	43.47	141.93	195.33	216.51	240.93	1226.92			
IN/14W-09L045	18	52.11	40.99	34.57	138.00	19.40	16.07	3.46	218.44	99.71	214.41	213.00	211.75	1263.41			
IN/14W-09P015	6A	190.75	119.77	67.65	175.71	226.97	201.26	113.06	146.23	161.18	137.06	166.03	149.06	1815.35			
IN/14W-11U015	7	36.99	106.33	110.82	62.14	0.00	0.00	96.97	126.22	121.72	127.07	132.47	122.53	1049.26			
IN/14W-14R005	15	43.60	105.35	109.34	61.99	0.00	0.00	90.40	119.38	114.25	119.54	123.65	114.64	1002.34			
TOTALS		981.77	779.45	656.73	616.17	661.77	777.33	1053.55	1249.48	1289.61	1833.48	1814.81	1714.27	13654.42			
CALIFORNIA MATERIALS COMPANY																	
2N/14W-30A015	4926-	36.86	36.79	33.95	26.55	23.79	33.01	36.73	36.23	36.77	32.22	32.43	36.24	399.57			
CONSOLIDATED ROCK PRODUCTS COMPANY																	
2N/14W-30A035	2	80.43	60.64	55.19	41.44	44.04	62.07	74.16	72.85	75.87	86.37	50.53	65.73	777.28			
2N/14W-30A045	3	83.36	57.01	51.27	38.89	41.54	58.50	68.13	66.87	70.04	78.76	66.89	61.03	722.29			
TOTALS		171.79	117.65	106.46	80.29	85.58	120.57	142.29	139.72	145.91	165.13	97.42	126.76	1499.57			
FOREST LAWN MEMORIAL PARK ASSOCIATION																	
IN/13W-33N015	2	2.70*	0.00*	0.00*	0.00*	0.00*	0.00*	0.10*	0.00*	0.00*	0.00*	0.00*	0.00*	2.80			
IN/13W-33N025	3	27.50*	17.50*	10.00*	4.80*	1.50*	8.50*	14.00*	35.83*	34.58*	43.36*	47.43*	23.55*	263.95			
IN/13W-33P015	6	21.20*	7.90*	7.10*	3.00*	2.10*	6.00*	23.60*	17.20*	14.90*	17.36*	17.00*	17.89*	156.81			
IN/13W-04B015	7	13.40*	11.70*	7.00*	5.10*	0.40*	3.20*	9.56*	20.36*	20.81*	23.13*	23.27*	25.70*	163.63			
TOTALS		64.80	37.10	24.10	13.50	4.00	17.70	47.26	73.47	70.29	83.87	82.76	67.14	585.99			
FOREST LAWN MEMORIAL PARK ASSOCIATION																	
IN/13W-33N035	4	15.20*	22.10*	14.20*	0.00*	21.10*	56.20*	0.00*	29.63*	27.50*	3.54*	24.29*	26.22*	239.98			
GLENNVILLE, CITY OF																	
IN/13W-19J015	STP1T	1.00	2.00	0.00	2.00	2.00	2.00	1.00	4.00	21.00	9.48	12.05	5.89	64.42			
IN/13W-19J045	STP2T	121.00	117.00	116.00	110.00	104.00	112.00	110.00	113.00	87.00	132.78	153.31	128.03	1414.12			
TOTALS		1337.00	707.00	635.00	694.00	627.00	687.00	685.00	867.00	1143.00	1892.34	1832.07	1272.79	12379.00			
HAMPER, CECILIA DE MILLE																	
2N/14W-05A025	CEHEG	0.00*	0.00*	0.00*	0.00*	0.00*	0.34*	0.34*	0.46*	0.68*	0.72*	1.15*	0.80*	5.47			
2N/14W-05L015	WYCKF	0.24*	0.34*	0.34*	0.00*	0.00*	1.04*	1.06*	1.79*	2.25*	3.71*	3.09*	4.56*	18.72			
2N/14W-05U015	ZENS	2.12*	1.00*	1.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	4.12			
TOTALS		2.36	1.34	1.34	0.44	0.44	1.38	1.40	2.25	3.23	4.43	4.24	5.36	26.31			
LIVINGSTON-GRAHAM, INC.																	
2N/14W-10N015	SNLNU	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	13.37*	13.37*	26.74			
2N/14W-19U015	SNVAL	23.67*	23.67*	23.02*	21.02*	22.06*	24.83*	32.42*	36.86*	29.98*	31.39*	25.09*	23.32*	222.33			
TOTALS		23.67	23.67	23.02	21.02	22.06	24.83	32.42	36.86	29.98	31.39	25.09	23.32	249.07			
LOS ANGELES, CITY OF																	
IN/13W-19	5	CS-CM	424.47	449.49	477.73	492.05	526.41	236.41	713.73	667.81	650.83	556.24	432.97	379.48	5487.59		
IN/13W-19K035	CS-51	0.02	0.03	0.00	0.42	0.09	0.02	1.86	0.03	0.00	0.00	0.00	0.00	0.00	2.47		
IN/14W-05N015	NH-1A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	132.94	162.30	102.57	4.62	0.00	401.83		
IN/14W-05P015	NH-1B	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	144.51	166.55	143.99	0.00	269.49	724.54		
IN/14W-05P025	NH-17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	134.66	164.63	104.25	0.00	0.00	403.74		
IN/14W-05L015	NH-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.44	0.00	0.00	180.97	81.13	297.54		
IN/14W-06N015	NH-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.92	10.45	180.47	0.00	199.84		
IN/14W-06P015	NH-5	0.00	62.19	67.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.81	130.65	0.00	307.12		
IN/14W-06P025	NH-31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.25	8.72	311.69	0.00	0.00	405.26		
IN/14W-06O015	NH-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.65	100.67	181.50	0.00	0.00	367.82		
IN/14W-06O035	NH-1A	1.24	62.80	22.80	0.00	0.00	0.00	0.00	0.00	51.44	150.09	145.20	0.00	0.00	459.37		
IN/14W-06U055	NH-29	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.91	164.67	160.51	0.00	0.00	390.44		
IN/14W-06H015	NH-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	89.65	84.55	194.44	0.00	0.00	368.64		
IN/14W-06H055	NH-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	126.67	157.46	132.30	0.00	0.00	416.43		
IN/14W-06H075	NH-28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.47	140.61	171.97	157.30	0.00	480.35		
IN/14W-07A015	E-1	35.24	0.00	0.00	0.00	0.00	0.00	48.30	242.70	236.71	266.04	267.75	225.51	259.06	1583.91		
IN/14W-07J015	E-10	17.47	0.00	0.00	0.00	0.00	0.00	4.30	200.99	249.08	177.55	249.08	249.06	16.41	1168.94		
IN/14W-07J035	E-6	13.77	0.00	0.00	0.00	0.00	0.00	10.56	85.42	237.44	167.24	234.92	234.62	15.38	1019.37		
IN/14W-08A015	NH-21	0.00	0.00	84.46	0.00	0.00	0.00	33.08	28.05	255.39	196.81	213.31	0.00	0.00	613.10		

GROUND WATER EXTRACTIONS
(CONTINUED)
IN ACHÉ-FÉE

		PRODUCTION												TOTAL	
I STATE	I OWNERS	1 JAN	1 FEB	1 MAR	1 APR	1 MAY	1 JUNE	1 JULY	1 AUG	1 SEPT	1 OCT	1 NOV	1 DEC	1 JAN	1 FEB
I WELL	I DESIGN	1 JAN	1 FEB	1 MAR	1 APR	1 MAY	1 JUNE	1 JULY	1 AUG	1 SEPT	1 OCT	1 NOV	1 DEC	1 JAN	1 FEB
I NUMBER	I RATION	1 JAN	1 FEB	1 MAR	1 APR	1 MAY	1 JUNE	1 JULY	1 AUG	1 SEPT	1 OCT	1 NOV	1 DEC	1 JAN	1 FEB
LOS ANGELES CITY OF															
CONTINUED															
W/14W-08A05	NH-20	0.00	0.00	89.07	0.00	0.00	33.63	86.05	281.87	208.77	255.49	265.77	265.58	1868.21	0.00
W/14W-08A05	NH-35	0.00	0.00	80.32	108.94	0.00	25.90	41.16	200.53	154.70	184.35	8.08	0.00	185.21	0.00
W/14W-08A05	NH-10	0.00	0.00	106.23	0.00	0.00	36.37	87.05	300.49	230.78	88.52	0.00	0.00	861.94	0.00
W/14W-08B015	NH-2	50.58	0.00	0.00	0.00	0.00	0.00	0.00	87.51	238.72	286.02	34.27	0.00	162.18	0.00
W/14W-08B015	NH-12	50.17	0.00	0.00	0.00	0.00	0.00	0.00	287.57	237.97	255.25	30.58	0.00	123.86	0.00
W/14W-08B015	NH-4	89.19	0.00	0.00	0.00	0.00	0.00	281.72	317.68	302.78	309.38	389.16	175.09	1088.21	0.00
W/14W-08B015	NH-5	26.39	0.00	0.00	0.00	55.53	99.49	326.06	225.62	310.90	302.71	28.52	0.00	1338.62	0.00
W/14W-08B015	NH-10	26.37	0.00	0.00	0.00	0.00	0.00	222.12	112.61	0.00	176.00	0.00	0.00	238.73	0.00
W/14W-08B015	NH-1	1.39	0.00	0.00	0.00	0.00	30.08	103.83	86.01	197.89	273.71	265.24	17.22	1199.35	0.00
W/14W-08B015	NH-5	83.29	132.94	0.00	0.00	0.00	0.00	0.00	170.93	316.30	330.70	344.49	188.04	1177.89	0.00
W/14W-08B015	NH-4	17.79	0.00	0.00	0.00	0.00	48.32	106.23	279.94	194.77	271.07	268.07	17.42	1197.81	0.00
W/14W-08B015	NH-10	1.39	0.00	0.00	0.00	0.00	0.00	0.00	237.97	218.00	218.00	0.00	0.00	1199.35	0.00
W/14W-15M015	NH-2	0.00	0.00	0.00	0.00	0.00	0.41	287.33	315.08	298.63	305.26	301.70	294.93	1920.87	0.00
W/14W-15P015	NH-4	24.38	0.00	0.00	0.00	0.00	0.00	0.00	261.57	183.09	183.09	87.03	0.00	250.93	0.00
W/14W-160015	NH-9	5.85	0.00	0.00	0.00	15.17	1.83	0.00	1.85	1.85	1.85	1.85	1.85	1.85	1.85
W/14W-17A015	NH-1	1.75	0.00	0.00	0.00	0.00	0.00	121.60	162.96	132.58	120.90	120.90	1.87	885.50	0.00
W/14W-18H015	NH-13	70.41	0.00	0.00	0.00	0.00	0.39	58.56	73.88	65.91	61.82	51.93	1.58	308.26	0.00
W/14W-18C015	NH-16	14.92	0.00	0.00	0.00	0.00	15.01	87.10	90.29	83.60	85.58	82.95	2.82	861.25	0.00
W/14W-18C015	NH-1	52.01	0.00	0.00	0.00	0.00	0.00	0.00	117.30	187.08	187.08	0.00	0.00	901.91	0.00
W/14W-18H015	NH-22	13.20	0.00	0.00	0.00	0.00	15.38	87.79	88.24	82.19	81.73	76.54	2.34	847.48	0.00
W/14W-18C015	NH-10	220.47	0.00	0.00	0.00	0.00	3.84	250.47	288.47	251.06	282.42	255.30	188.92	1712.85	0.00
W/14W-22M015	NH-11	30.52	0.00	0.00	0.00	0.00	15.93	90.91	71.53	0.00	0.00	0.00	0.00	222.48	0.00
W/14W-22C015	NH-1	11.75	0.00	0.00	0.00	0.00	0.00	15.73	220.89	211.50	218.90	211.07	122.25	1488.13	0.00
W/14W-23	5 UGIA	80.78	31.40	72.67	55.74	0.00	0.00	117.31	112.45	2.64	13.86	218.83	137.86	829.44	0.00
W/14W-23A035	UG-11	80.01	108.00	27.48	23.83	11.84	12.70	41.95	86.27	23.89	0.00	0.00	0.00	820.05	0.00
W/14W-24A035	NH-26	187.13	187.81	175.16	167.75	0.00	71.74	174.70	184.00	104.85	159.09	139.92	135.45	1572.20	0.00
W/14W-24A035	NH-10	0.00	107.75	198.27	107.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1070.00	0.00
W/14W-24A055	NH-28	0.00	107.75	0.00	0.00	257.76	155.00	405.30	433.98	209.90	202.22	405.15	0.00	2826.31	0.00
W/14W-24A065	NH-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W/14W-24A065	NH-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W/14W-24A065	NH-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W/14W-24A035	CS-52	0.00	111.71	190.07	56.70	40.84	194.62	61.81	106.30	194.33	165.87	182.77	166.15	169.93	1223.92
W/15W-01A015	NH-15	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.64	0.00	0.00
W/15W-01A025	NH-34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.99	0.00	0.00	0.00	128.88	0.00	0.00
W/15W-01A035	NH-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W/15W-01A035	NH-37	0.00	133.29	112.10	0.00	0.00	0.00	56.20	71.14	0.00	0.00	0.00	0.00	372.73	0.00
W/15W-01A045	NH-25	1.54	108.00	76.37	0.00	0.00	0.00	0.00	0.00	60.79	381.45	343.64	0.00	222.08	0.00
W/15W-01A055	NH-23	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W/15W-01A055	NH-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.82	366.76	227.38	0.00	817.36	0.00
W/15W-01A055	NH-26	1.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.79	231.31	0.00	277.73	0.00
W/15W-02B015	NH-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W/15W-02B025	NH-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.80	0.00	0.00	0.00	11.80	0.00
W/15W-02B015	NH-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.75	134.00	0.00	197.08	0.00
W/15W-02B025	NH-33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.72	175.11	0.00	256.66	0.00
W/15W-03A035	NH-7	59.46	23.99	61.77	59.94	29.57	38.49	72.88	88.05	130.74	70.77	167.70	158.83	1433.71	1190.34
W/15W-03A035	NH-10	0.00	0.00	16.67	11.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1190.34	0.00
W/15W-04A035	NH-4	120.34	125.00	184.26	184.55	05.63	86.78	180.42	204.38	182.02	175.85	184.37	153.35	1877.96	0.00
W/15W-04A045	NH-5	116.46	133.93	177.00	216.21	74.74	94.41	124.47	223.83	177.89	173.76	181.00	172.75	2182.33	0.00
W/15W-05A015	NH-1	70.55	22.77	30.00	28.28	41.87	41.87	30.92	30.92	60.92	60.92	60.92	60.92	181.81	0.00
W/15W-05A015	WU02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W/15W-13B005	LN00M	0.00	0.00	1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05
W/15W-13B025	LN00M	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	8.00	0.00
W/15W-13B035	LN00M	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	8.00	0.00
W/15W-13B055	LN00M	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.14	1.00
W/15W-14A015	FNW41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01
TOTALS		279.83	2287.39	2289.76	1679.37	129.87	174.24	5880.33	9575.45	1127.02	1083.00	8981.50	8415.53	59701.88	0.00

LOS ANGELES, CITY OF (RICHARD WELLS)

[illegible]

МЭНЭ, ЖУНН АНУ БАХНАНД

2H/14W-11M015 4973J 0.0H* 0.0H* 0.1H* 0.1H* 0.0H* 0.0H* 0.0H* 0.0H* 0.0H* 0.0H* 0.0H* 0.0H* 0.0H*

MUNICHIA LAKE ASSOCIATION, INC

2H/16W-08J015 722- 0.60* 0.58* 0.58* 0.64* 0.64* 0.41* 0.41* 0.65* 0.65* 0.62* 0.62* 0.65* 7.15

WILKINSON HANCOCK MUTUAL WATER COMPANY

[illegible]

SEAND, HUEHUCK AND COMPANY

[illegible]

SULLIVAN SERVICE COMPANY

1M/13W-Z0F015	ME1M1	7.374	6.753	2.676	6.062	6.553	2.651	6.566	2.47	2.42	2.53	2.39	31.31
1M/13W-Z0F015	ME1M2	6.496	6.76	6.76	6.01	6.242	2.61	2.52	2.40	2.31	2.39	30.46	31.31
1M/13W-Z0F015	ME1M3	6.47	6.06	6.16	6.52	6.00	2.81	2.74	2.38	2.41	2.44	2.57	31.25
TOTALS		2.41	2.11	2.22	2.13	2.05	2.24	2.04	2.57	2.29	2.08	2.35	93.06

TABLE B-1
GROUND WATER EXTRACTIIONS
(CONTINUED)
IN ACRE-FEET

STATE	OWNERS	WELL	NUMBER	NATION	PRODUCTION												TOTAL
					1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	
					UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	
<u>SPONSHMANS LODGE, INCORPORATED</u>																	
IN/15W-250015	1				4.17*	4.17*	4.17*	4.17*	4.17*	4.17*	4.17*	4.17*	4.17*	4.17*	4.17*	4.17*	110.04
<u>TULULA LAKE PROPERTY OWNERS ASSN</u>																	
IN/14W-288015	3845F				0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.00*	0.40*	7.30*	6.12*	4.93*	3.65*	30.40
<u>VALHALLA MEMORIAL PARK</u>																	
IN/14W-040015	4				7.66*	7.67*	7.67*	1.00*	1.00*	1.00*	17.00*	10.80*	13.08	28.85	25.71	29.69	151.73
IN/14W-090015	2				0.25*	0.25*	0.25*	0.00*	0.00*	0.00*	0.70*	0.90*	1.40	2.41	5.98	2.69	14.83
TOTALS					7.91	7.92	7.92	1.00	1.00	1.00	17.70	11.70	15.08	31.26	31.69	32.38	166.56
<u>VAN DE KAMP'S HOLLAND DUTCH BAKERS, INC</u>																	
15/13W-040015	1				4.55*	3.64*	3.61*	3.42*	3.44*	0.80*	0.10	0.10	0.10	0.65	0.61	0.35	22.02
<u>WALT DISNEY PRODUCTIONS</u>																	
IN/14W-23E015	EAST				50.36	45.30	57.44	51.10	52.92	61.91	46.24	43.78	41.96	50.24	73.11	39.47	614.01
IN/14W-23E025	WEST				103.22	62.12	66.10	56.75	68.04	72.20	58.56	64.97	88.50	149.04	113.52	121.13	1029.20
TOTALS					153.58	107.42	123.54	107.85	121.01	134.11	104.85	113.75	130.46	199.28	186.63	160.60	1643.21
<u>WRIGHT, J MARION AND ALICE H</u>																	
IN/13W-32E025	3937F				0.85*	0.53*	0.44*	0.18*	0.00*	0.29*	0.49*	0.65*	0.72*	1.12*	1.33*	0.44*	7.04
<u>SUBTOTALS - SAN FERNANDO BASIN</u>																	
					5809.42	4338.66	4089.67	3605.85	1967.68	3621.17	8018.72	12182.71	11649.37	14963.87	13169.20	8328.75	91785.07
<u>SYLMAR BASIN</u>																	
<u>MOISE CASCADE BUILDING COMPANY</u>																	
3N/15W-25E015	LOWER				0.46*	0.31*	0.31*	0.31*	0.31*	0.31*	0.31*	0.31*	0.46*	0.46*	0.46*	0.46*	4.47
3N/15W-25E015	3				0.78*	1.30*	1.30*	0.82*	0.82*	0.82*	0.82*	1.06*	1.06*	0.64*	0.64*	0.75*	10.81
TOTALS					1.24	1.61	1.61	1.13	1.13	1.13	1.13	1.37	1.52	1.10	1.10	1.21	15.28
<u>CHURCH OF JESUS CHRIST OF L D SAINTS</u>																	
3N/15W-20E015	1				46.36*	16.12*	0.00*	0.00*	0.00*	0.00*	23.24*	46.57*	44.78*	46.57*	46.57*	46.58*	318.84
<u>LOS ANGELES, CITY OF</u>																	
2N/15W-04	5 MISSN				0.00	0.00	0.00	0.00	0.00	0.00	216.83	273.83	447.54	438.64	419.51	414.46	2210.81
<u>SAN FERNANDO, CITY OF</u>																	
3N/15W-34E015	4				34.94	25.91	23.54	34.07	31.50	17.18	34.16	44.65	41.64	62.71	64.49	59.98	480.62
3N/15W-34E015	2				22.36	0.00	31.03	3.24	0.54	1.49	10.15	44.22	20.14	55.38	73.79	52.57	317.91
3N/15W-34E015	3				151.02	153.86	93.59	119.41	94.89	154.42	150.88	161.72	156.48	156.26	147.38	150.62	1691.03
3N/15W-34E015	5				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.82	1.32	17.53	5.19	25.06
3N/15W-34E015	7				6.87	11.64	18.52	6.75	11.08	1.97	9.89	15.11	23.34	39.01	44.00	27.26	215.44
3N/15W-34E015	1				26.76	18.44	16.10	15.44	8.39	16.30	17.14	19.91	20.60	23.95	24.91	23.65	229.18
3N/15W-34E015	6				4.52	4.62	4.58	4.58	3.55	4.22	4.57	5.61	6.01	7.45	7.72	6.22	63.65
TOTALS					250.47	214.93	187.49	184.04	149.95	195.58	226.79	271.22	270.03	346.08	379.82	325.49	3022.69
<u>SUBTOTALS - SYLMAR BASIN</u>																	
					300.07	232.66	189.10	185.97	151.06	196.71	468.04	612.99	763.87	832.39	847.00	787.74	5567.68

TABLE 8-1
GROUND WATER EXTRACTIIONS
(CONTINUED)
IN ACRES-FEET

		PRODUCTION												TOTAL
STATE	OWNERS	1964												
WELL	DESIGN	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	
NUMBER	NATION													

VERDIGO BASIN

CRESSENTA VALLEY COUNTY WATER DIST

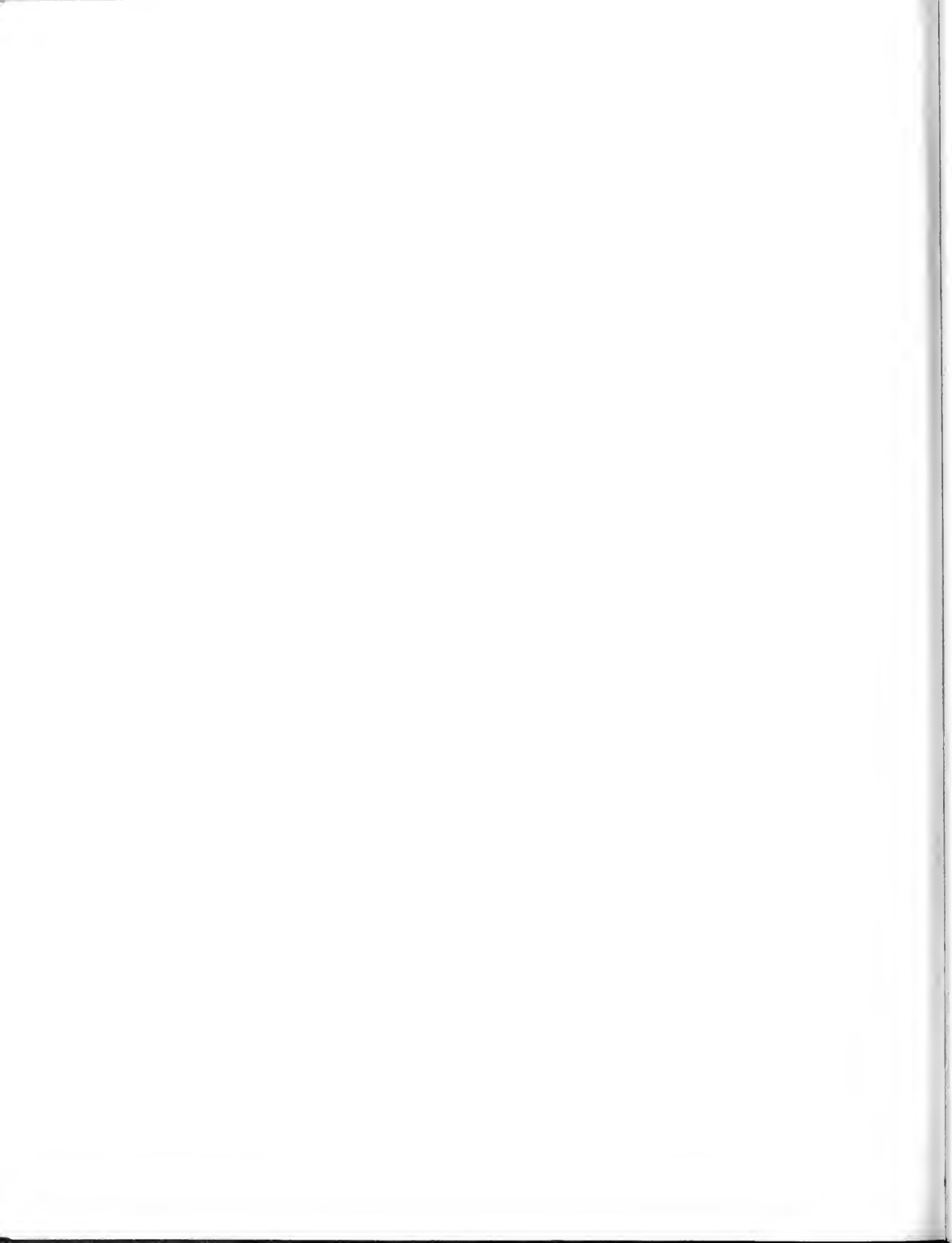
1N/13W-030055	8	1.27	4.37	7.87	4.76	4.24	11.37	24.33	34.17	27.66	41.87	41.89	8.97	228.82
2N/13W-28N015	9	36.42	33.41	26.81	25.97	12.79	11.53	21.76	31.98	20.44	36.40	39.67	22.51	320.19
2N/13W-29F025	2	1.55	2.21	8.33	6.36	1.00	1.91	3.55	5.16	5.96	4.98	1.60	6.97*	51.78
2N/13W-29H015	4	22.75	20.37	13.90	19.16	0.00	3.24	13.06	14.83	13.63	16.10	15.24	4.14	156.82
2N/13W-33C015	7	44.42	45.46	34.96	30.03	26.94	34.99	28.85	41.88	26.95	48.18	52.46	31.48	444.15
2N/13W-33C035	1	0.54	0.15	0.01	0.00	0.74	0.00	0.04	0.00	0.44	0.00	0.00	6.97	8.89
2N/13W-33C065	5	57.05	51.43	48.69	45.24	43.15	47.13	41.60	62.87	47.48	64.69	68.00	46.88	624.39
2N/13W-33G015	11	30.53	24.00	19.16	13.60	20.13	31.04	40.97	46.48	43.98	48.44	47.11	20.66	386.36
2N/13W-33H015	14	3.06	0.03	0.29	1.57	0.00	3.16	2.07	30.55	10.31	46.59	48.44	19.20	165.27
2N/13W-33H035	A	0.00	0.00	0.00	0.00	0.00	0.50	5.99	8.62	0.93	0.07	0.62	0.08	14.73
2N/13W-33H055	10	73.15	60.45	50.46	43.76	46.43	63.47	67.94	53.77	74.31	49.83	50.11	81.07	714.75
2N/13W-33H065	12	0.00	0.00	0.13	0.04	0.00	0.04	0.00	0.02	0.74	0.00	3.42	0.00	4.39
DI/VER-SION	DUNS	5.24	4.74	4.90	2.23	0.00	0.00	0.00	0.00	6.35	9.83	8.38	7.43	49.10
DI/VER-SION	PICK	4.62	4.50	4.44	4.44	5.76	8.20	7.76	8.97	13.66	16.56	17.41	16.50	112.92
TOTALS		286.60	251.12	220.02	202.61	163.28	216.82	262.92	331.30	292.84	384.04	397.05	272.76	3287.36

GLENNDALE CITY OF

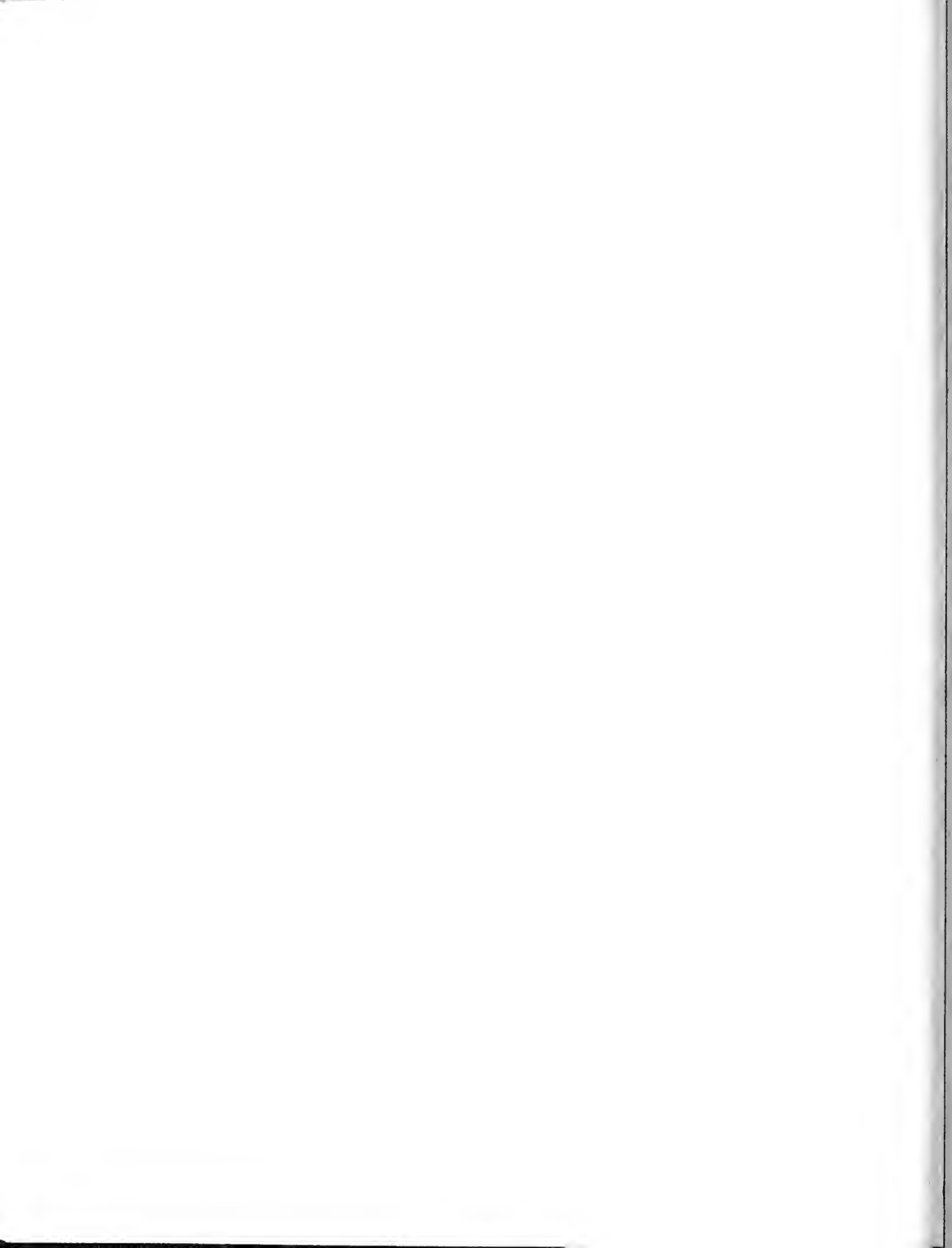
1N/13W-10F	5	GL3-4	174.00	168.00	173.00	118.00	103.00	158.00	149.00	176.00	154.00	173.69	175.56	169.61	1904.86
1N/13W-15P	5	VPCKP	116.00	111.00	119.00	132.00	114.00	135.00	128.00	136.00	133.00	134.72	131.99	129.72	1520.43
TOTALS			290.00	279.00	292.00	270.00	217.00	293.00	277.00	312.00	287.00	308.41	307.55	299.33	3430.29
SUBTOTALS -															
VERDIGO BASIN			576.60	530.12	512.02	472.61	380.28	507.82	539.92	649.30	579.84	692.45	704.60	572.09	6717.65

GRAND TOTALS	6686.04	4740.74	2514.04	325.70	9017.16	13454.56	12993.08	16508.71	14720.80	9688.58	104470.34
ULARA	5101.44	4264.43									

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